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Original Articles.

CONGENITAL MALFORMATIONS OF THE VERTEBRAE.

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A STUDY of the abnormalities of the vertebrae as revealed in x-rays, shows that they are of quite common occurrence and frequently the cause of scoliotic deformity. These facts are exemplified by the frequency of such abnormalities in the plates of one hundred consecutive cases of scoliosis from the x-ray files of the New York Orthopedic Dispensary and Hospital.

These abnormalities may be conveniently placed in three classifications: Defects in development, changes in type, and changes in relation.

DEFECTS IN DEVELOPMENT.

The vertebrae grow from three primary and at least five accessory centres of ossification; the median one of the primary centres forms the greater part of the body, while the other two, one appearing in each pedicle, form the postero-lateral part of the body, the arch, and the greater part of the processes. The accessory centres appear at the tips of the spines and transverse processes and at the upper and lower surfaces of the bodies to complete their growth, but apparently are not a factor in the production of the abnormalities observed. Abnormalities in the growth at the primary centres, however, may cause defects in development of the vertebrae. An extra lateral centre would cause a hemi-vertebra (Plate I and II). The absence of a lateral centre or centres would cause a lateral wedging of the vertebra (Plate III), whereas the absence or defective growth of the centre for the body would cause an absence or atrophy of the body of the vertebra.

Spina Bifida is a marked posterior defect of the vertebrae, caused by defective development of one or both lateral centres. Slight posterior defects are commonly called hidden Spina Bifida. Posterior defects occur most frequently at the lumbar sacral junction and somewhat less frequently at the dorso-lumbar junction, and here are usually simple (Plate VI and VII), but when they appear elsewhere are directly combined with some other abnormality (Plate II).

The centres of growth of adjacent vertebrae may fuse together, causing a fusion of the bodies alone (Plate IX), if the median primary centres are affected. The laminae transverse process and spines may be fused with the

bodies unaffected (Plate X) if the lateral primary centres are involved. Finally if the costal elements are affected there is fusion of the adjacent ribs or bifurcated ribs (Plate X).

Defective development of a lateral articular process of a vertebra is also seen. This may occur as a rudimentary development of the process or a change in the plane of the articulation. Rudimentary development of an inferior articular process of the fifth lumbar vertebra is most commonly seen (Plate VIII) with a somewhat less frequent involvement of the fourth lumbar. The inferior lateral articulation of the fifth lumbar vertebra quite frequently may be in the antero-posterior plane (Plate XII and XIII), and much less frequently the fourth lumbar, while the articulations of the other lumbar vertebrae are of the intemal-external plane of a normal lumbar vertebra.

CHANGE IN TYPE.

The change in type is determined by the growth of the costal element. In the change from the cervical to the dorsal type the costal element of the seventh cervical vertebra may fail to fuse and we have a cervical rib (Plate X). A change from the dorsal to the lumbar type is indicated by decreased number of ribs when complete (Plate XV) or by the rudimentary (Plate II and XI) twelfth ribs when the change is not complete. An increase in the number of ribs indicates a change from the lumbar to the dorsal type (Plate I and III).

The transverse processes of the fifth lumbar vertebra may be enlarged by increased development of the costal element, which would indicate a change from lumbar to sacral type. These enlarged processes may have contact with the sacrum, when they may be designated as sacralized (Plate XIV) or they may also have contact with the ilium, as is the case in a normal first sacral vertebra, and the vertebra is then said to be of the sacral type. But it may be classed as a lumbar vertebra if there is a true movable joint between it and the sacrum.

We may also have six lumbar vertebrae with a normal or increased number of ribs, indicating a change from a sacral to lumbar type. The sixth lumbar vertebra may be of normal type (Plate XVI, left), have enlarged transverse processes, be sacralized (Plate XV), or have contact with the ilium and be of the sacral type (Plate XVI, right).

CHANGE IN RELATION.

A change in relation either tilting or rotation between two adjacent vertebrae, more marked than would be produced by their normal movements in the scoliotic deformity, may occur (Plate XIII and XVII). This tilting or rotation may be secondary to some other abnormality, such as antero-posterior (or A.-P.) articulation (Plate XIII), rudimentary inferior articular process (Plate VIII) or enlarged transverse process (Plate XIV), but frequently no cause for the abnormal tilting or rotation is demonstrable.

In this series there were thirty-eight instances of defects in development, sixty-five instances of change in type and thirty-nine instances of change in relation, as follows:

I. Defects in development=38

1. Posterior defects=8
   - of 1st Sacral=3 { 2 simple { 5L tilted=1 / Enlarged transverse process=1 / 1 combined with posterior defects elsewhere
   - of 5th Lumbar=1 Enlarged transverse process 5L of the sacral type and 5L tilted, 13 ribs
   - of Dorso-lumbar Junction=3 { 2 simple (Plate VI / 1 combined with hemivertebrae of 13D
   - of Dorsal=2 { 1 (13-14D) combined with posterior defect 1S and wedging 10-13D (Plate III) / 1 (2D) combined with hemivertebra 3D (Plate II)
2. Body=5
   - (a) Wedged=2 { 9 and 10D and 4 and5L / 10-13D has 14 ribs (Plate III)
   - (b) Absence=1—5L
   - (c) Hemivertebrae=2 { 3D (Posterior defect 2D) (Plate II) / 13D (Posterior defect 12D)
3. Fusion
   - (a) Bodies=0
   - (b) Transverse processes, laminae and spines=0
   - (c) Bifurcated ribs=0
4. Lateral articular process=25
   - (a) Rudimentary=17 (Plate VIII)
     of 4th Lumbar=4 unilateral
     of 5th Lumbar=13 unilateral
   - (b) Change to antero-posterior plane (5L)=8 { Unilateral=6 { 4 with / 2 against } (Plates XII and XIII) / Bilateral=2

II. Changes in type=65

1. Cervical to dorsal=3 (Plate XI)
   Cervical ribs=3 (combined)
2. Dorsal to lumbar=35
   Complete=3
   11 ribs=3 (2 with five lumbar vertebrae)
   10, 12 ribs=1 (Plate IX)
   11, 12th ribs (rudimentary 12th)=1
   Rudimentary 12th ribs (3 unilateral)=30 (Plates II and XI)
3. Lumbar to dorsal=3
   14 ribs (rudimentary 14th)=1 (Plate III)
   13 ribs (rudimentary)=1 (Plate I)
   12, 13 ribs (13th rudimentary)=1 (Plate V)
4. Lumbar to sacral=9
   Five lumbar vertebrae with 11 ribs=2
   Enlarged transverse processes 5th lumbar=6 (Plate XIV)
   Unilateral=2—sacralized=2
   Bilateral=4—sacralized=4 { 1 sacral type / 13 ribs
   Enlarged transverse processes 6th lumbar with 11 ribs=1
5. Sacral to lumbar=15
   6 lumbar vertebrae=15 (Plates XV, and XVI and XVII)
   (a) Enlarged processes=11
   (b) Sacralized=10 { Sacral type=5 / Unilateral=1
   Unilateral=1

III. Changes in relation

1. Rotation=14 (Plate XVII)

4th Lumbar=4	Simple=7	
5th Lumbar=7	Combined with enlarged transverse process=5 (out of 18)	
6th Lumbar=2		Same vertebra=1
11th Dorsal=1	Combined with antero-posterior articulation=2 (out of 8)	
		Same vertebra=2
	Combined with posterior defects and wedging elsewhere=1	

2. Tilting=26 (Plates VIII and XII and XIV and XVII)

4th Lumbar= 3	With antero-posterior articulation=5 (out of 8)
5th Lumbar=20	With rudimentary lateral articulations= 12 (out of 17)
4th and 5th Lumbar= 1	With enlarged transverse process=10 (out of 18)
6th Lumbar= 2	Same vertebra= 3
	With rotation=4 (out of 14)
	Same vertebra= 1

IV. Totals

Without primary malformation=34
With primary malformation=66
Apparent cause for scoliosis=45
Apparently unrelated to scoliosis=21
Infantile paralysis=21—Malformations=7 (Cause=2)
Arthritis=1
Empyema=1—Malformations=1
Rickets=1—Malformations=1 (Cause=1)

Region involved by malformations.*

Cervico-dorsal=3
(Cervical ribs)
Cause=2
Unrelated=1

Dorsal=3
(Wedging and posterior defects)
Cause=3

Dorso-lumbar junction=36
Cause=1 (Hemivertebra)
Unrelated=35
Lumbar=0

Lumbar-sacral junction=48

Cause=40	Rudimentary articular process=17 (Cause)
Unrelated=8	Anterior-posterior articulation=8
	Cause=5
	Unrelated=3
	Enlarged transverse process (5L)=6
	Cause=4
	Unrelated=2
	Enlarged transverse process (6L) with 11 ribs=1 (Cause)
	6 Lumbar vertebrae=15
	Cause=5
	Unrelated=10
	5 Lumbar vertebrae with 11 ribs=2 (unrelated)
	Posterior defects=4
	Tilted=26 (simple=1)
	Cause=2
	Rotated=14
	Simple=6
	Cause=6

* In some cases malformations occur in more than one region.

FIG. I.

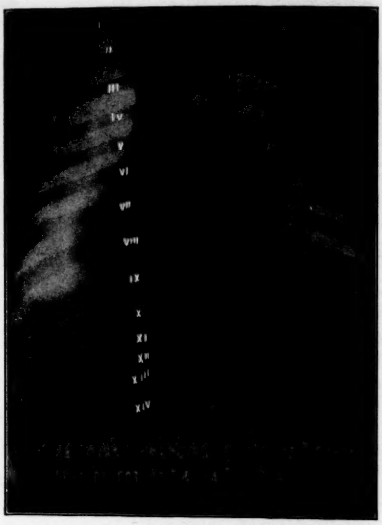


FIG. III.

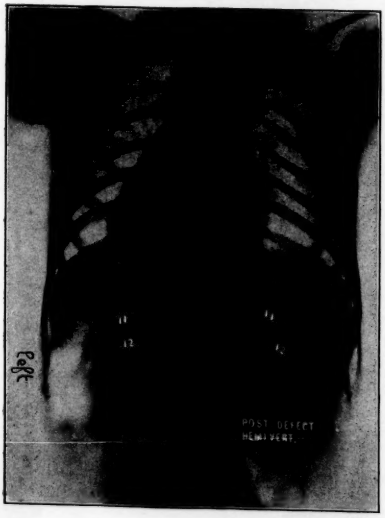
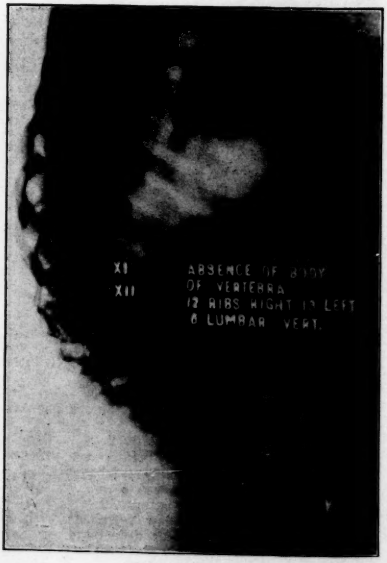


FIG. II.



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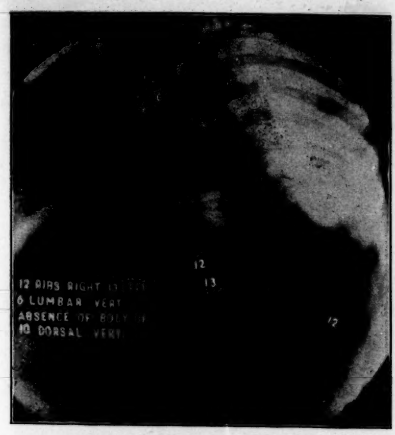

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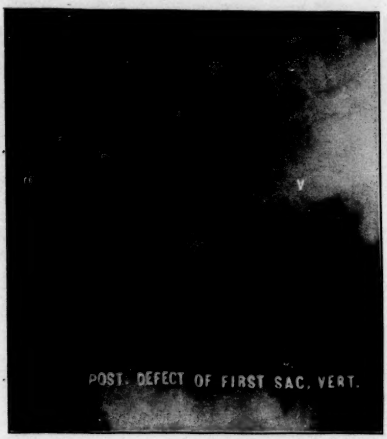

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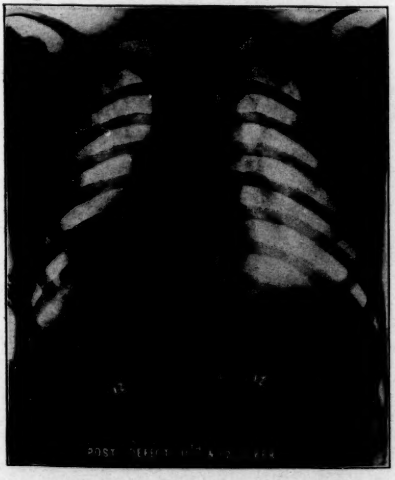

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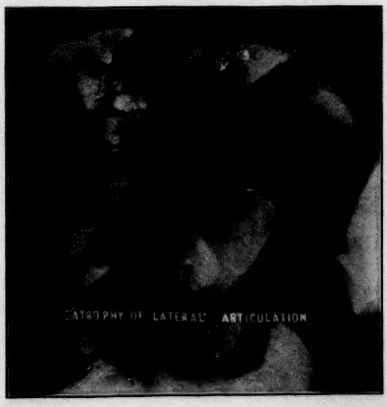

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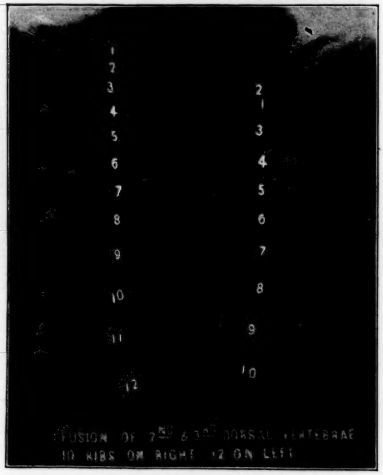

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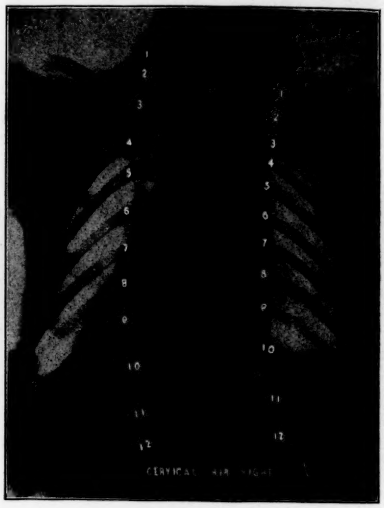

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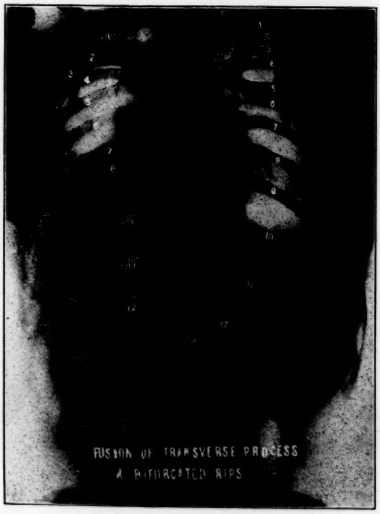

FIG. X.

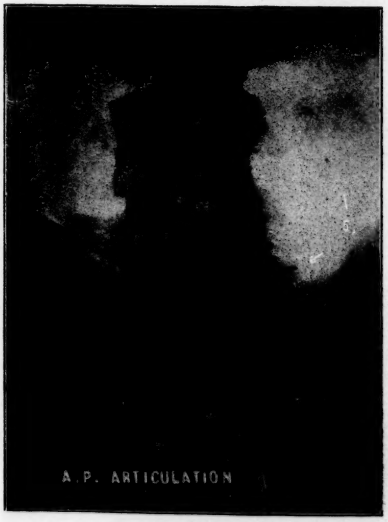

FIG. XII.

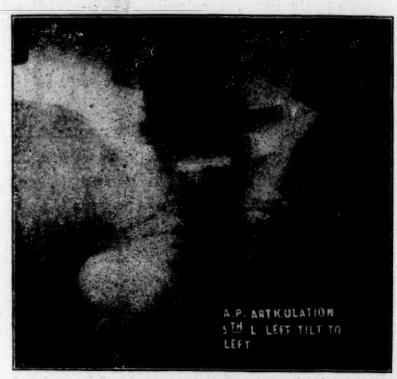

Fig. XIII.

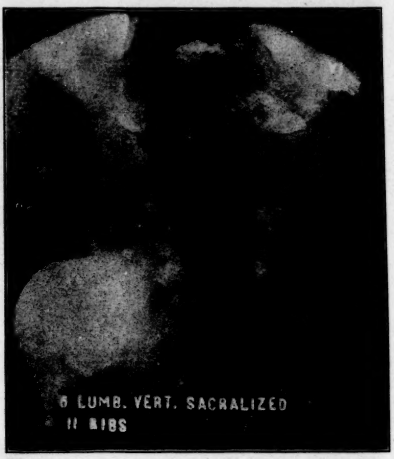

Fig. XV.

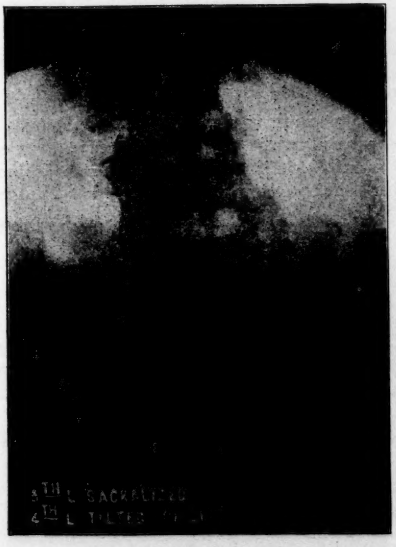

Fig. XIV.

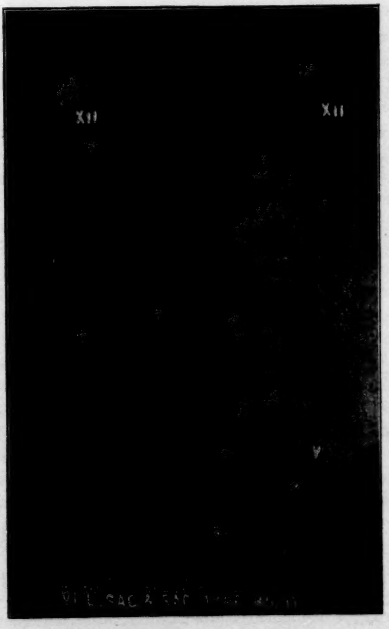

Fig. XVI.

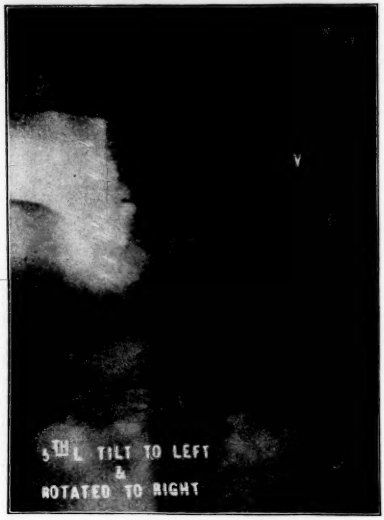

FIG. XVII.

CAUSAL RELATION.

Defects in development, such as hemivertebrae (Plate I and II) and wedging (Plate III) are the cause of an asymmetry of the spine. This asymmetry is characteristic, in most cases, because of the irregularity of the deformity, which is quite evident on examination of the patient. The deformity, as a rule, is apparent at birth, and increases in proportion to the growth at the asymmetrical centres of ossification. Posterior defects may occur without causing any lateral deformity, as the defect is usually symmetrical (Plate VI).

A rudimentary, inferior lateral articular process is the primary cause of a curve in not a few instances (Plate VIII). The lack of development in an articular process produces a tilt, or rotation, between the adjacent vertebrae; the spine is thrown out of equilibrium and a curve results.

When both inferior lateral articulations of the last lumbar vertebra are in the antero-posterior plane, the relations of the vertebrae may not be disturbed, and no curve is produced. But when one lateral articulation is in the antero-posterior plane and the other in the internal-external plane of a normal lumbar vertebra, the vertebra is almost invariably tilted or rotated and a curve results (Plate XIII). The tilting may be either toward the side of the antero-posterior articulation or toward the opposite side. An increase in lumbar lordosis tends to separate the articular surface at the antero-posterior articulation, and a slipping occurs. This slipping may be downward when the vertebra will be tilted toward the same side, or it may be outward, when the vertebra is tilted toward the opposite side, and its internal-external articulation where there is a downward slipping because of the separation of the articular surfaces following the slipping outward at the antero-posterior articulation.

If the change in type of a vertebra is asymmetrical, a curve may be produced. For instance, if both transverse processes of the last lumbar vertebra are symmetrical a change in relation frequently occurs and a curve results (Plate XIV, XV and XVI).

Forty per cent. of the cases in this series had some abnormality at the lumbar-sacral junction as the apparent cause of their deformity. Therefore it is advisable to make a careful x-ray study of all cases of scoliosis, as these cases need treatment directed at the primary asymmetry which occurs in the lumbar-sacral junction.

The attempt may be made to correct this asymmetry by exercises. If jackets are used, their object must not be primarily to correct the curve, but to correct the asymmetry which is the cause of that curve. While if an operative procedure is used to stiffen the spine, the result will not be completely satisfactory unless a normal relation is first restored at the lumbar-sacral junction and this relation fixed by fusion.

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PRINCIPLES OF POSTURE, WITH SPECIAL REFERENCE TO THE MECHANICS OF THE HIP-JOINT.

By Mabel Elsworth Todd, Boston.

Second Paper

In the previous paper* the mechanics of the body were discussed from the standpoint of the distribution of the weight of the bones of the body in relation to the median line of the structure. It was demonstrated that when the median line of the structure passed through the center of each of the units of weight, the structure would be maintained with the least possible strain between its various parts; and the muscles, therefore, would have the greatest freedom for movement. This law is universally applied in the world of mechanics, where the weight of the articulated parts of a mechanism is so adjusted as to facilitate freedom of movement with the minimum of wear and tear. When the human structure is governed by this law of balance, there will be an equality of pressure between all articulating bony contacts and weight will be maintained at center with the least expenditure of muscular and nervous energy.

The points to be discussed in this paper are:

I. The Balance of the Principle Units of Weight in Relation to the Whole;

II. The Interdependence of the Various Units; and

III. The Significance of Normal Mechanics of the Hip-Joint, at Rest and in Motion.

THE BALANCE OF STRUCTURAL WEIGHT IN RELATION TO THE MEDIAN LINE.

In considering this point, we note that every articulated structure must have a median line. That line may be either the mean line of the weight of the articulated groups, or the mean line of resistance between the articulated units of weight, in which each unit is being held away from center, or out of alignment. The following drawing illustrates this point: Figure I, line *a*, indicates the median line of weight of articulated groups, or equilibrium of the mass. Figure II, line *a*, indicates the degree of resistance between the units of weight, *b*, *c*, *d*.

Fig. I.

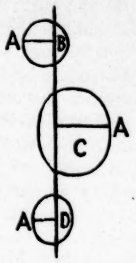

Fig. II.

It matters not whether the motive power of the mechanism comes from within or without, the above law is operative under all conditions. The motive power may be steam, electricity, or nerve energy, the operation of this law must be considered in each case, if conservation of power is to be attained. In studying the mechanics of the human structure, the problem is to find the similarities of the functioning of the anatomical parts in relation to this mechanical principle.

With the principal units of weight of a structure in perfect alignment, there would be entire freedom of action in all the flexible parts. The main function of the bony structure is to support the weight of the body. The bones, being the most inert substance of the human structure, should be maintained in such equilibrium as will require the least possible muscular effort for maintenance of weight, and thus release all muscles for perfect coördinate action in movement.

In the first paper, it will be remembered that the structure was divided into three principal units of weight, or bony "blocks," the pelvis, the thorax, and the skull. If the median line passes through the center of weight of all the units, there would be equal pressure at all points of the wall of each unit, and these three units of weight would hang at the point of least resistance, or in equilibrium. Therefore, all parts of the structure contacting with these balanced units of weight would be free from uneven pulls or strains. The conclusion reached was that if the three bony "blocks" and the shoulder girdle were not in equilibrium in relation to the central line of the structure, they must be maintained out of position by an increase of muscular effort.

* Boston Medical and Surgical Journal, Vol. clxxxii. No. 26, June 24, 1920.

THE INTERDEPENDENCE OF PARTS.

Continuing the above argument, a fixed position of any part of the three bony units would tend to hold that part of the spine with which it is in contact, in a stiff position. A state of fixation in any one part of the spine naturally induces the necessity for greater motion in some other portion of the spine, and we thus have an unequal strain upon the spinal column. For example, when you ask anyone to stand erect, he usually does certain definite things; raises his sternum and stiffens his ribs, thus maintaining the thoracic structure out of alignment at the expense of undue muscular effort.

The struggle in the chest wall, induced by the above mentioned conditions, imposes an inequality of pull upon the spine, which interferes with normal functioning and is a waste of energy. For instance, if the sternum were elevated beyond the position of equal pressure in the ribs around their entire area, the ribs would thereby be pulled forward, losing their flexibility at the point of contact with the dorsal spine, thus bringing the weight of the thoracic wall out of position, or alignment, in relation to the skull and pelvis. The result would obviously be a tightening of all muscles and ligaments of the vertebrae of the dorsal spine. This would tend to produce an increased lordosis of the lumbar spine; as any lack of freedom in one part of the spine requires compensatory movement in adjoining parts. With continued repetition this position tends to perpetuate itself, and finally becomes a habit. The muscles and ligaments adjust their structures to the constant strain and we lose our sense of normal balance through what we might term a "false consciousness." With this false consciousness, or self-consciousness, coördination, or the mechanical reflex action of the various parts in movement, is lost to a large extent.

If the chest is lifted, the entire structure is laboring under a mechanical disadvantage. For many years this has been one of our glaring mistakes in physical education.

If the thorax and the pelvis are in equilibrium, thus freeing the articulating surfaces of the ribs with the dorsal spine, the spinal muscles will be released for coördination, and the lumbar spine will have a tendency to maintain its normal curve. Fixation of the muscles of the dorsal spine, with increased lordosis of the lumbar spine, throws the weight forward and thus weakens the support of the fifth lumbar, allowing it to slip forward, and this, in turn, tends to increase the obliquity of the pelvis, as will be shown presently under "Mechanics of Hip-joint." By increased obliquity of the pelvis, the muscles connecting the head of the femur with the acetabulum, would have an inequality of pull and the weight of the torso is thereby brought out of alignment with its foundation, and its support at the head of the femur weakened. Any inequality of pull of the muscles of the lumbar spine, or of the muscles supporting the femur in the acetabulum, produces an uneven balance of the weight of the structure upon the head of the femur, with resulting strains and the consequent loss of the free action of the hip-joint. This will not only bring a strain upon the muscles of the pelvis and of the hip-joint, but will also produce a strain upon the spine, owing to the unequal pressure upon the vertebrae and the inevitable compensatory action of the fifth lumbar.

An unequal pull of the deep-lying muscles and ligaments around the head of the femur would make normal functioning at this point difficult, if not impossible. The superficial muscles are thus called upon to assume part of the responsibility of supporting the weight of the body. In a general way, the function of the deep-lying muscles might be regarded as that of maintaining a pull upon weight back toward center; and the function of the superficial muscles, that of pulling weight away from center, as in the voluntary movements of the limbs* This interplay of deep-lying and superficial muscles of the body equalizes inner and outer stress, thus maintaining equilibrium. The result is perfect coördination, and the weight of the body is carried with the least expenditure of effort.

Through coördination of the many groups of muscles of the body, there results a unity of force which secures freedom of action in all parts. The bony structure should be so balanced that every ligament and muscle receives the least possible strain, and every muscle of the body is ready for active coördination in the readjustment in the various units of weight, necessitated by movement. In a natural or perfectly balanced structure, every organ would be in a position for best functioning, and there would be a normal relation of all parts of the

* By the superfical muscles are meant all muscles involved in the voluntary movements of the extremities.

mechanism. This balance of parts should be maintained in movement as well as when the structure is at ease. If the weight of the pelvis is balanced in proper relation to the weight of the thorax at their mean center, as has been explained, it will be seen that the articular surfaces of the sacrum and the fifth lumbar vertebra will be in normal contact. The contact of this articulation is normal when the weight of the vertebrae of the spine rests evenly upon the sacrum, and all spinal muscles are free for coördination, otherwise weight of the spine would be maintained at a disadvantage. The amount of weight to be adjusted is not important. The significant fact is that all structures, and parts of structures, must be balanced. Each integral part of a structure must rest evenly upon that part directly beneath it if freedom from strain, and coördination of parts is to be attained. With the articulation of the fifth lumbar and the sacrum normal, the lumbar spine will retain its natural curve and the deep-lying muscles of this region will have their proper alignment, or their normal perpendicularity. This will bring the weight of the torso upon the center of the head of the femur in its contact with the acetabulum.

Faulty adjustment of weight at one point always implies mechanical readjustment or necessary reaction of another point to compensate; and so we note that the interdependence of parts of the whole structure in its bony articulations and between its muscular groups is such as to produce great disadvantage to the structure if local freedom at any articulation is not maintained.

THE RELATION OF THE HEAD OF THE FEMUR TO THE ACETABULUM AND THE NORMAL MECHANICS OF THE HIP-JOINT.

If the entire weight of the body rests evenly upon the head of the femur the psoas and the iliacus muscles would have their normal alignment. These muscles give the femur muscular support at the front (See Plate IV.). With these muscles functioning normally, the weight of the leg, when in motion, is suspended from the center of the torso. The nearer weight is maintained in the center of a structure, the better. In obedience to this law, the leg has support from within the torso by the above deep muscles, while the superficial or voluntary muscles swing the weight of the leg in walking. For a mechanical example, let us suspend a fifty-pound weight on an iron chain from the ceiling and throw out from it a dozen ribbons to as many children,—you have formed a May-pole. Any child may pull on its ribbon in any direction and swing the weight, but the weight is still supported by the chain.

LIGAMENTOUS SUPPORT OF THE HIP-JOINT.

In the following illustrations we observe three aspects of the hip-joint and its ligamentous support. In Plate I we see the strength of the bony fibre in the head of the femur at the center of support and the apparent equality of pull of the deeper ligaments maintaining the femur in normal position.

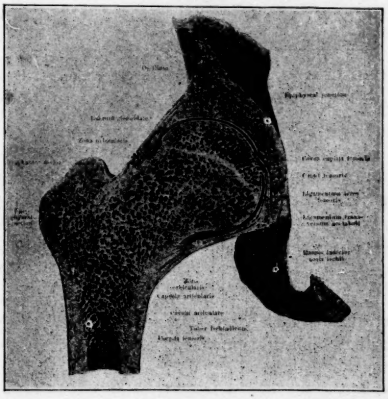

PLATE I.—All plates taken from Hand Atlas of Human Anatomy by Werner Spalteholz.

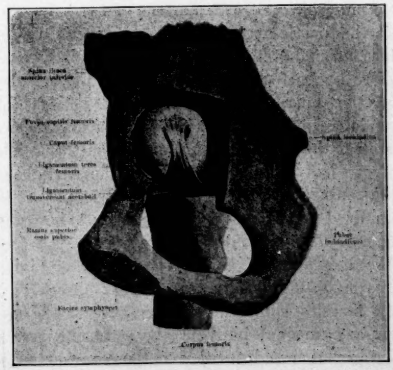

PLATE II.—The hip-joint is shown as it appears from within.

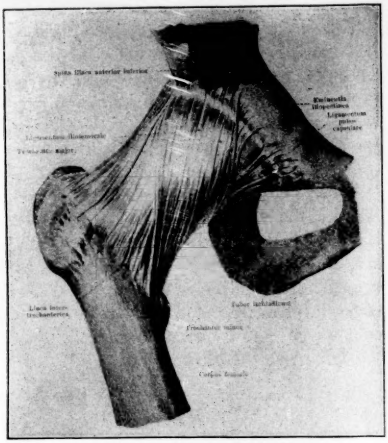

PLATE III shows the various layers of ligaments which, in their cross-fibered alignment, afford strength of support and, at the same time, a resiliency which affords freedom of movement in the joint in response to muscular pull.

If the weight of the three bony groups or units, the pelvis, the thorax, and the skull, were adjusted at the median line, an equalized stress at all parts of each group would result. The weight of the whole would then rest evenly upon the head of the femur, thus freeing its articulation with the acetabulum from unequal strain. With all muscles and ligaments of this articulation in equalized tone, and the body-weight balanced upon the femur, this joint would retain its normal functioning under all conditions, and the spine would remain free from any compensatory action at the fifth lumbar and the sacrum. To have this adjustment, we must have all articulations of the spine and of the pelvis free, and all connecting tissues in a normal state of elasticity. Especially must there be perfect freedom and equality of play of the muscles of the hip-joint. This joint tends, in a way, to act as a shock absorber to protect the spine and the torso from the weight of the body in its contact with the earth, and the consequent jar. Every time we step, our one hundred and fifty pounds weight has to be transferred through this articulation to the feet. The ligaments of this articulation, or joint, lose much of their power as shock absorbers if the muscles connecting the femur with the pelvis are unequal in their play. If one recalls the insertion and position of these various muscles, it will be seen that the area of origin inside the pelvic wall is far greater than the point of insertion in the head of the femur.

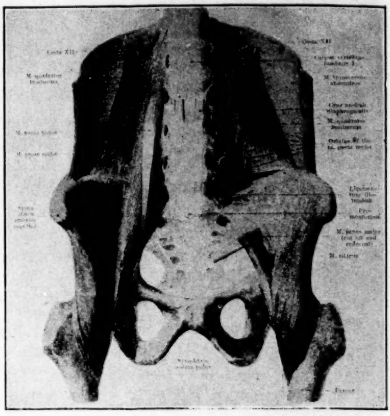

PLATE IV.

In Plate IV, the psoas and iliacus muscles are shown supporting the head of the femur at the front. The psoas, having its origin at the intervertebral discs and lateral surfaces from the twelfth thoracic to the fifth lumbar vertebra, and its insertion in the fascia iliaca, aids in maintaining the normal obliquity of the pelvis and in supporting the femur at the front.

The iliacus rising at the anterior surface of the ilium fascia iliaca, and spina iliaca, anterior, superior, and inferior forms a circular surface lining the ilium. It converges downward in front of the hip-joint, and is inserted in the lesser trochanter. Its origin being on the inside of the ilium and its insertion in the head of the femur indicates its function as that of giving the femur support at the anterior rim of the acetabulum .

The muscles at the back which aid in supporting the head of the femur in normal position are the piriformis and the obturators, as seen in Plate V. It will be recalled that the piriformis has its origin at the inner surface of the sacrum, and converging, its fibers run through the foramen ischia of the ischium, lateralward to the tip of the great trochanter. The obturator internus arises on the medial surface of the inner side of the ischium, and bending at right angle, passes to its insertion at the back of the great trochanter. The obturator externus is included in this group. The

above muscles give the femur support at the back and the psoas major and the iliacus give it support at the front, whereas the rectus abdominus, the psoas minor, and the quadratus lumborum aid in maintaining the normal obliquity of the pelvis. Added to these deep-lying muscles are the lower back muscles, the abdominal oblique and the transversus. The ligaments connecting the great trochanter and the head of the femur to the acetabulum would have equal stress if all of these muscles were properly performing their function and the weight of the torso would rest evenly upon this joint.

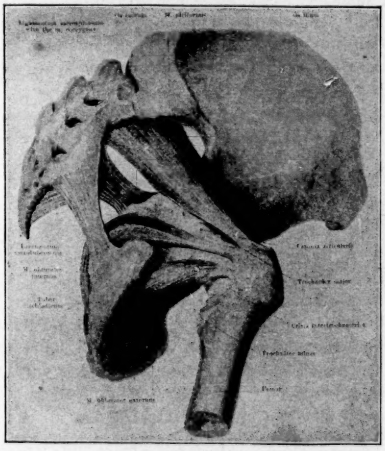

PLATE V.

If we incline the body forward in preparation for a step with the weight of the pelvis and of the thorax in proper adjustment at the median line, the torso evenly balanced upon the head of the femur, the ligaments and muscles controlling the action of the hip-joint will be free, and the leg will swing forward supported by the equalized play of the deep-lying muscles mentioned above.

The circular area at the origin of these muscles in the pelvis, with each muscle converging to a tendinous point at its insertion in the femur, affords a resistance to all outward movements of the leg and receives the recoil of outward thrusts. This action may be likened to that of the wire spokes of a bicycle wheel. The pull upon the wire spokes must be absolutely equalized at the rim of the wheel. Otherwise it is obvious that the weight from above, and an irregularity of contact at any point of the rim of the wheel in traveling, would produce too great a strain or concussion upon the rim, and the structure would break at its point of least resistance. Such shocks of weight and concussion must be absorbed somewhere in the mechanism, and if the spokes are all of equal tension, the strain will be equally distributed: otherwise the strain would fall upon the main structure of the framework.

The function of the hip-joint may be likened in anatomical construction and physiological functioning to such a mechanism. Plate VI is a diagramatic drawing suggesting this point.

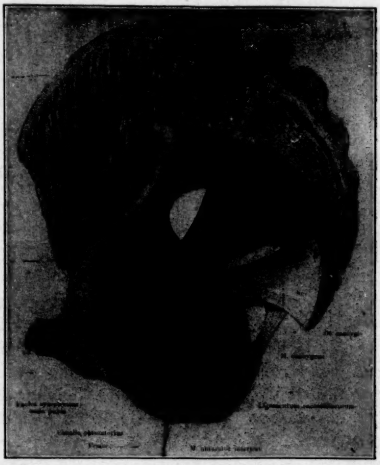

PLATE VI.

If the iliacus muscle were shown in this plate, one would note the circular area of the origin of the hip muscles on the inside of the pelvis; and these muscles, the iliacus, psoas, obturator and piriformis in their diverging fibers, suggest the spokes of the bicycle wheel.

If equality of play of all the deep-lying muscles of this joint is not maintained, its freedom is lost and the spine must receive the recoil which should be absorbed in great part at this joint. Inner and outer stress must be equalized in a structure, if perfect equilibrium and full power of the structure is to be maintained. The evidence of this law of physics may be observed in annealing glass and steel. To obtain the greatest power of resistance to external forces, stresses originating within the structure must be equalized as far

as possible to enable it to withstand greater stress from without. This principle is also shown in all mechanical action. Every outward impulse of a structure must be balanced by inner stress to absorb the recoil. If this were not true, there would be no power in the outward thrust, as there would be no resistance, and if there were no resistance, the body behind the thrust would go with it.

For example, the power expended in the leg which kicks a football across the field must be resisted by an equality of stress somewhere within the structure, and this area of resistance must equalize the stress of all muscles concerned in the action. If not absorbed in the legitimate joint at the head of the femur and the acetabulum, through the equalized support of all the deep-lying tissues of that articulation, and the equalized resistance of the fibers of these tissues at their origin, compensatory action and thereby strain, must be conveyed to the spine. This would weaken the muscular support around the fifth lumbar and the sacro-iliac.

To repeat, if a boy kicks a football, the number of pounds pressure required for that kick must be sustained by resistance somewhere within the body. If the inner muscles of the pelvis are perfectly free and equalized in action and stress, the weight of the body will be maintained upon the head of the femur, and the same muscles which are aiding in the maintenance of this equilibrium of weight will receive the recoil and the shock of the forward impetus of the leg. Any lack of freedom or action in these muscles, and the shock of the leg movements will then be delivered to the spine by compensatory action at the fifth lumbar.

Briefly, the hip-joint is like a wire-spoke bicycle wheel; the head of the femur being the weight-carrying hub, and the obturators and the iliacus the radiating spokes, which maintain the equality of stress within the rim necessary for the equal distribution of resistance. Also, like the wheel, the inherent tension in the ligaments and the muscular fibres, holds the head of the femur in equalized suspension in the acetabulum, ready to transmit without slack or undue rebound, the anticipated stress received or imposed in action.

We recognize that the spine should always be protected from uneven or irregular stress or recoil from the activities of the extremities, or the reactions of the weight or concussions of the body. Lack of normal functioning in any legitimate joint conveys the irregular strain to the spine, and its unity of action and reaction is lost. Fix any point, and you bring a strain upon the whole unity of action, due to the interdependence of all integral parts of the structure. For a simple example of this, if one were to place the fingers on the cervicle vertebrae of a subject (who is standing in a relaxed position), and ask him to throw the hips back and thus increase the curve of the lumbar spine, an increased curve in the cervical spine will also be noted, provided the subject maintains freedom of the superficial muscles of the neck so that the mechanical reaction in the spine may be felt in the vertebrae.

As a summary of the foregoing principles, it may be said that when an inert mass is maintained with equal stress at all points in all directions, it is in equilibrium. Our weight is maintained in the bones of the structure, therefore, if there be equal stress upon all points in all directions, they would be maintained in equilibrium with the least expenditure of muscular effort. If this mechanical fact is one of the governing factors of the human structure, then the bony articulations would be found free at all points of their contacting surfaces when weight of the bony structure is so balanced as to produce equal stress at all points in all directions. We must find such a position for the maintenance of the weight of the structure as will secure the greatest protection to the whole organism, especially to the spine, from the strain and jar o fthe varying adjustments of the weight when in motion. One of the principal joints for this protection is the articulation of the head of the femur with the acetabulum. With proper resiliency at this joint and equalized action of all its muscles and ligaments, we have the necessary mechanical adjustment for absorbing the recoil from the varying outward thrusts of the leg and the consequent shifting of weight.

In conclusion, structures aiding to maintain the obliquity of the pelvis and the free articulation of the hip-joint are the following muscles: psoas major and minor, piriformis, obturators, and the ligaments of the sacro-iliac and those connecting the head of the femur with the acetabulum and the fascia of the spinal muscles in the lower part of the back.

We also have the muscles of the abdominal wall, particularly the rectus abdominis. Upon these deep-lying tissues largely depends the balance of the weight of the torso upon the head of the femur, and the determination of the obliquity of the pelvis. Therefore freedom of all these tissues is absolutely necessary to insure perfect balance of the weight of these parts.

Book Reviews.

Hygiene of Communicable Diseases. By FRANCIS M. MUNSON, M. D. Paul B. Hoeber. New York. 1920.

An excellent manual of information, available at the present time concerning the epidemiology and the management on sea and land of communicable diseases, is contained in this volume, "Hygiene of Communicable Diseases." The subjects of epidemiology, prophylaxis, and sanitation are presented in concise, readily accessible form, in such a way as to be of practical value to the physician, sanitarian, sanitary engineer, missionary or medical officer. The carefully headed sections, sub-sections, and paragraphs, make this book an unusually helpful one for reference in emergencies A chapter devoted to a new subject, sanitary measures following great disasters, is of considerable interest and practical value. Naval sanitation, railway sanitation, municipal and rural sanitation, and sanitation in schools, prisons, and industries are among the topics to which detailed consideration is given. The second part of the book describes diseases spread by oral and nasal discharges, the fecal-borne diseases, the venereal diseases, insect-borne diseases, diseases spread by infected animals, and wound infections. This book is an excellent treatise of an important subject.

Publications from the Dermatological Research Laboratories of Philadelphia. Vol. II. 1920. Collected Reprints.

The Dermatological Research Laboratories were instituted in 1912 by a citizen of Philadelphia and supported by him for four years. During this time, the work of research was mainly on the lines of psoriasis, and resulted in the publication of a number of essays on this subject. Later, it was found that the laboratory facilities authorized a broader research and the production and study of new chemical compounds designed to destroy the germs of various infectious diseases were undertaken. At first, the investigations dealt chiefly with mercury compounds; later, they began the elaboration of arsenic compounds. At about this time the supply of salvarsan threatened to be cut off on account of the war, and a successful attempt was made in the laboratories to reproduce this complicated chemical compound. Under the name of arsenobenzol, salvarsan was made and distributed to hospitals and physicians throughout the United States. The profits made from the sale of this drug have been and are being used to support the medical research laboratories, and this has resulted in the publication of over seventy contributions to science.

The present is Volume II of the Collected reprints of the laboratories' publications, and comprises thirty-two papers, published in a number of different periodicals. The director of the staff is Dr. J. Frank Schamberg, his assistants being Drs. John A. Kolmer and George W. Raijiss, and a majority of the papers are by these men, sometimes with the assistance of the auxiliary staff. Naturally, syphilis, and especially its modern methods of treatment and the study of the chemical compounds used therapeutically, are the subjects of a large number of the essays. Some studies of the etiology of influenza, of the pneumococcus, and of the diphtheria bacillus, are included. As would be expected from the names of the authors, these essays are all of high scientific value, and offer a notable contribution to the American literature on these important subjects.

MEDICAL REGISTRATION IN MASSACHUSETTS.

The results of the May examinations conducted by the Board of Registration are as follows:

GRADUATION FROM	REGISTERED	REJECTED
Massachusetts College of Osteopathy		3
Kentucky School of Medicine		1
Tufts Medical School	2	2
College of Physicians and Surgeons of Boston	1	2
Middlesex College of Medicine and Surgery	1	7
College of Physicians of University of Southern California		1
Woman's Medical College, Pa.	1	
Laval		1
University of Valdimir		1
University of Maryland		1
University of Lisbon	1	
College of Physicians and Surgeons of Baltimore		1
Baltimore Medical College		1
Fordham	1	
	5	21

THE BOSTON
Medical and Surgical Journal
Established in 1828

THURSDAY, JUNE 16, 1921

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The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

THE A. M. A. CONVENTION IN BOSTON.

THE meeting of the A. M. A. is now a matter of history. The attendance shown by registration of 5500 members is next to the largest in the history of the Association, being exceeded by about fifty in the Chicago Convention of 1918. The attendance at sections was unusually large and the quality of papers presented high. As usual, surgery and its specialties attracted the larger numbers, but unusual attention was paid to public health questions.

The social events were very generally participated in, the reception at the Harvard Medical School attracting a great number of members and guests.

The sessions of the House of Delegates were evidently of unusual interest, judging from the reverberating echoes which could not be restrained by closed doors and guarded reports of delegates. Since the House of Delegates felt obliged to go into a committee of the whole for the purpose of discussion, and then excluded the few unofficial spectators with the explanation that some things might be said which would be unfit for general report, one may wonder who was suspected of indiscretions. Possibly the published reports were carefully censored, for members of the House were evidently amused by retrospection of the speeches or behavior.

The affairs of the Association are of so much importance that constituent bodies should not only send the highest type of men to represent them, but keep such men on the delegation, in order that, through continuity of service, the greatest influence may be exerted. The Massachusetts custom of comparatively short service on this delegation is to be deprecated. To be useful in the highest degree, a person should follow the doings of this body through as many years as he may be willing to contribute his service, so that through association with others and accumulated knowledge of the history of the Association's affairs, one may represent his constituents most effectively.

As an illustration, the custom of the Suffolk District of the Massachusetts Medical Society in limiting the term of service of its members on the Council, is believed by many to be very unwise, for a useful and influential person may exert greater influence through extended experience.

The action of the House of Delegates in dealing with the question of State Medicine, rejected the first report of the committee and adopted a very simple resolution approving and endorsing all proper activities and policies of state and federal governments directed to the prevention of disease and the preservation of public health. Everybody would agree to that, but this resolution was diplomatically vague, and leaves the interpretation open to any one.

The question of the attitude of the Association on the problems relating to the use of alcohol by the profession, was also left in a very indefinite state, and merely expressed disapproval of the behavior of a small minority of the profession who seem to be in "the position of being purveyors of alcoholic beverages." The scientific estimate of the value of alcohol in medicine is therefore left as before.

The election of Dr. George Edmund de Schweinitz to the presidency meets with universal approval, both because of the personal qualifications of Dr. de Schweinitz and also because there is a very general feeling that this office should be filled by a man who is represen-

tative of the highest scientific attainments as well as possessing qualities of leadership.

To some persons, the advantages of the custom of electing a speaker may be questioned, for the influence of a president might be used to better advantage in controlling the deliberations of the House of Delegates and in that way dealing directly with the functions of the Association.

The general arrangement and management of the meeting reflect great credit on Dr. F. B. Lund and his committees, and have demonstrated qualities of leadership and breadth of view which would warrant recognition by promotion to higher official positions.

Dr. Burrage's communication made public the appreciation of the officers of the Association for the hospitality extended by the Massachusetts Medical Society.

THE TRUE SIGNIFICANCE OF ETHER DAY.

ONE of the most interesting features of the clinical exercises incident to the Section meetings of the American Medical Association, was the address of Dr. J. Collins Warren in the surgical amphitheatre at the Massachusetts General Hospital.

Dr. Warren used very few notes, much of the address being extemporaneous, in which he contrasted the methods employed before the use of ether to produce relaxation and some diminution of pain, and thereby emphasized the blessings of anaesthesia.

The address in full would be of great interest, but not being written, is not available. Dr. Warren, however, has kindly furnished the subjoined abstract of his discourse.

THE TRUE SIGNIFICANCE OF ETHER DAY.

Dr. J. Collins Warren addressed the surgical meeting of the American Medical Association at the Massachusetts General Hospital on "The True Significance of Ether Day," on June 7, at twelve o'clock.

Dr. Warren called attention to the fact that it had been stated that the controversy connected with the discovery of surgical anaesthesia had obscured its true origin, but he said these conditions surrounded the beginnings of all great discoveries. Who would think of the steamboat without associating it with the name of Fulton; or think of the telegraph without associating it with the name of Morse; or, of the telephone without coupling it with the name of Bell? And yet years of litigation, as many of us personally know, followed the introduction of the telephone, and so we find the discovery of surgical anaesthesia no exception to the general rule. A decision has recently been reached by the Senate of the University of New York, based on recommendations from distinguished representatives of its electral board from every state in the country, giving Dr. William T. G. Morton a place in the Hall of Fame.

It is true that other individuals experimented also with ether, but not to a convincing degree, and therefore failed to affect in any way the surgical practice of the time.

On October 16, 1846, Dr. Morton administered ether to a patient for a major operation in surgery at the Massachusetts General Hospital. The experiment was so successful that it was followed immediately by other operations on following days. As Dr. Henry J. Bigelow pointed out, this experience showed three important things,—the safety, the certainty and the universal applicability of the agent employed in relieving pain in surgical operations.

It was a practical demonstration of what had been dreamt about for many years, and it was this triple feat that constituted the "Discovery" and entitled October 16, 1846, to have a special name like that of our national holiday. Whereas, the Fourth of July is called Independence Day, the date we are considering—October 16, 1846—should be called Ether Day, for both ushered in the dawn of a new era.

The work of Long, Wells and Jackson in no way affected surgical practice. It was not until the convincing experiment of Morton was made, in the dome of the amphitheatre of the Massachusetts General Hospital, that it became at once apparent to all the world that surgical anaesthesia had become a reality and that "pain was no longer the master, but the servant, of the body."

THE ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL FOR THE YEAR 1920.

LIKE nearly all hospitals, the Massachusetts General was handicapped by insufficient funds

and, during the year, the Trustees appointed a committee to obtain subscriptions to an endowment fund. Four hundred thousand dollars was pledged, and about one-half has been paid. The object of this particular fund is to provide for additions and changes in the plant. the total of the payments for this fund, together with bequests, donations, additions and subscriptions to the general fund, amounted to $707,000.

The increased cost of fuel and food was $79,776.97, and the deficit of the year was $57,000.

The eighteen professional divisions of the hospital have required larger expenditures in order to maintain their several functions.

Especial reference is made to the follow-up department which deals with patients during convalescence, after leaving the hospital.

The McLean Hospital has been able to resume scientific investigations without lowering standards of admission, and has now more than one-fourth of its patients on the free list. The report touches upon the need for a hospital for persons of moderate means, and the expectation that resources will be provided whereby this service can be given.

The three important functions of a great hospital are emphasized, *viz.*, the care of the sick, the development of good doctors and adequate training of nurses.

Less attention, in the report, is given to details of medical and surgical service than was formerly the custom with many hospitals, so that one who cares to work out the results of treatment from an analysis of the cases, would find the task difficult. The business and administrative activities are clearly set forth and furnish a model for other hospitals.

MEDICAL NOTES.

THE AMERICAN MEDICAL ASSOCIATION has formally pledged its support to the Federal plan of a Separate Department of Public Welfare, and has offered to coöperate in every way.

The Association has appointed a committee to coöperate with Brig.-Gen. Sawyer in preliminary organization work. Members of the committee are: Dr. George E. de Schweinitz of Philadelphia, now President of the Association; Dr. Thomas S. Cullen of Baltimore, Dr. Frank Billings of Chicago, and Dr. Charles W. Richardson of New York.

INSTRUCTIVE DISTRICT NURSING ASSOCIATION.—The significance of any health conditions brought out by the work of the Instructive District Nursing Association is due, not to the number of cases handled, but to the fact that the nurses are busy daily in every variety of existing home in every residential district of Greater Boston, and that their findings present, in consequence, what might be called a cross section of health conditions throughout the city. The pulse of the work is, of course, the new patients.

The normal increase of such patients in any one year in any large visiting nurse association, is 2,000. Last year, in Boston, it was 10,000, an increase phenomenal in the history of all district nursing associations, which was due, not to epidemics or emergencies, but was directly the result of a wider knowledge of the existence of the nurses among those who needed them. Such a rate of growth is not to be expected this year; in fact, if last year's gain can be maintained, it will be rather remarkable.

May was a relatively quiet month. Compared with the same month last year, however, it showed an increase in new patients of about 8%—2,553 for May, 1921; 2,358 for May, 1920.

The outstanding feature throughout the spring has been the prevalence of pneumonia, with which, in certain districts, notably East Boston and the North End, many people have been so exceedingly ill as to bring a very heavy pressure on the nurses. May showed a marked lightening in the number of pneumonia cases, though they were still heavier than in May, 1920—99 cases in May, 1921; 68 cases in May 1920. The really encouraging fact is that the death rate is lower.

May also saw an increase of 23% in visits to expectant mothers, an increase significant to future Bostonians, in view of the known fact that the saving of babies' lives depends in large measure on prenatal care.

The four Child Health Clinics which were held during the month, brought up the enrollment of children to 195. Only 15 of these were found to be without a defect.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending June 11, 1921, the number of

deaths reported was 195 against 199 last year, with a rate of 13.42 against 12.84 last year. There were 32 deaths under one year of age against 41 last year.

The number of cases of principal reportable diseases were: Diphtheria, 50; scarlet fever, 34; measles, 111; whooping cough, 13; typhoid fever, 1; tuberculosis, 52.

Included in the above, were the following cases of non-residents: Diphtheria, 2; scarlet fever, 1; measles, 1; typhoid fever, 1; tuberculosis, 7.

Total deaths from these diseases were: Diphtheria, 2; scarlet fever, 2; whooping cough, 1; tuberculosis, 18.

Included in the above, were the following cases of non-residents: Diphtheria, 1; tuberculosis, 1.

The Massachusetts Medical Society

ANNUAL MEETING OF THE COUNCIL, MAY 31, 1921

THE annual meeting of the Council was held at the Boston Medical Library, 8 The Fenway, Boston, May 31, 1921, at 5 P.M. The President, Dr. Alfred Worcester, was in the chair and the following 108 Councilors present:

BERKSHIRE,
G. H. Thompson, North Adams, V.P.
A. P. Merrill, Pittsfield.
P. J. Sullivan, Dalton, M.N.C.

BRISTOL NORTH,
Sumner Coolidge, Middleborough, V.P.
W. H. Allen, Mansfield.
F. A. Hubbard, Taunton, M.N.C.

BRISTOL SOUTH,
A. W. Buck, Fall River.
E. F. Cody, New Bedford, M.N.C.
R. W. Jackson, Fall River.
J. C. Pothier, New Bedford.

ESSEX NORTH,
R. V. Baketel, Methuen.
J. F. Burnham, Lawrence.
T. R. Healy, Newburyport, M.N.C.
G. E. Kurth, Lawrence.
J. J. O'Sullivan, Lawrence.
F. B. Pierce, Haverhill.
F. E. Sweetsir, Merrimac.

ESSEX SOUTH,
P. P. Johnson, Beverly, V.P.
S. P. F. Cook, Gloucester.
W. T. Hopkins, Lynn.
J. F. Jordan, Peabody.
W. G. Phippen, Salem, M.N.C.
R. E. Stone, Beverly.

FRANKLIN,
H. G. Stetson, Greenfield, M.N.C.

HAMPDEN,
F. H. Allen, Holyoke.
E. P. Bagg, Jr., Holyoke, M.N.C.
Philip Kilroy, Springfield.

MIDDLESEX EAST,
G. F. Dow, Reading, V.P.
L. M. Crosby, Wakefield.
E. D. Richmond, Reading.

MIDDLESEX NORTH,
J. A. Mehan, Lowell.

MIDDLESEX SOUTH,
E. H. Bigelow, Framingham, V.P., C.
E. A. Andrews, Newton.
E. W. Barron, Malden.
F. G. Curtis, Newton.
John Duff, Charlestown.
G. W. Gay, Chestnut Hill, Ex-P.
F. J. Goodridge, Cambridge.
L. S. Hapgood, Cambridge.
C. E. Hills, Natick.
F. R. Jouett, Cambridge.
H. J. Keaney, Everett.
C. E. Mongan, Somerville.
H. S. Rowen, Brighton.
W. D. Ruston, Somerville.
L. F. Sise, Medford.
F. G. Smith, Somerville.
C. H. Staples, Malden.
E. H. Stevens, Cambridge, M.N.C.
A. K. Stone, Framingham Center, Treas.
F. R. Stubbs, Newton.
Alfred Worcester, Waltham, P.

NORFOLK,
C. E. Allard, Dorchester.
W. B. Batchelder, Dorchester.
E. H. Baxter, Hyde Park.
E. H. Brigham, Brookline, Libra.
A. N. Broughton, Jamaica Plain, M.N.C.
T. F. Greene, Roxbury.
F. C. Jillson, West Roxbury.
G. W. Kaan, Brookline.
W. B. Keeler, Roxbury.
F. P. McCarthy, Milton.
H. H. Powers, Brookline.
Victor Safford, Jamaica Plain.
G. H. Scott, Roxbury.
Augusta G. Williams, Brookline.

NORFOLK SOUTH,
F. E. Jones, Quincy, V.P.
C. S. Adams, Wollaston.
O. H. Howe, Cohasset.
G. H. Ryder, Quincy, M.N.C.
G. M. Sheahan, Quincy.

PLYMOUTH,
C. E. Lovell, Whitman.
Gilman Osgood, Rockland.
F. G. Wheatley, North Abington, M.N.C.

SUFFOLK,
F. B. Lund, Boston, V.P.
J. L. Ames, Boston.
S. H. Ayer, Boston.
Robert Bonney, East Boston.
F. J. Cotton, Boston.
Lincoln Davis, Boston.
Channing Frothingham, Boston, C.
W. J. Gallivan, South Boston.
J. E. Goldthwait, Boston.

G. S. Hill, Boston.
W. C. Howe, Boston, M.N.C.
D. F. Jones, Boston.
F. T. Lord, Boston.
R. H. Miller, Boston.
J. J. Minot, Boston.
F. S. Newell, Boston.
W. H. Robey, Jr. ,Boston.
Stephen Rushmore, Boston.
Myles Standish, Boston.
Louisa P. Tingley, Boston.

WORCESTER,
F. H. Baker, Worcester.
W. P. Bowers, Clinton, Ex-P.
W. J. Delahanty, Worcester.
G. A. Dix, Worcester.
M. F. Fallon. Worcester
R. W. Greene, Worcester.
David Harrower, Worcester, M.N.C.
L. C. Miller, Worcester.
G. O. Ward, Worcester.
F. H. Washburn, Holden.
S. B. Woodward, Worcester, Ex-P., C.

WORCESTER NORTH,
W. E. Currier, Leominster, M.N.C.
H. R. Nye, Leominster.
A. H. Quessy, Fitchburg.

In the absence of the Secretary, Dr. Walter C. Howe, a Councilor of Suffolk was duly nominated and elected *Secretary pro tempore*.

The reading of the record of the last meeting was dispensed with and the record adopted as printed. The Secretary read the names of the Nominating Committee; these members and alternates responded to their names and retired:

BERKSHIRE,
P. J. Sullivan.

BRISTOL NORTH,
F. A. Hubbard.

BRISTOL SOUTH,
E. F. Cody.

ESSEX NORTH,
T. R. Healy.

FRANKLIN,
H. G. Stetson.

HAMPDEN,
P. Kilroy.

MIDDLESEX SOUTH,
E. H. Stevens.

NORFOLK,
A. N. Broughton.

NORFOLK SOUTH,
G. H. Ryder.

PLYMOUTH,
F. G. Wheatley.

SUFFOLK,
W. H. Robey, Jr.

WORCESTER,
David Harrower.

WORCESTER NORTH,
W. E. Currier.

The committee appointed to consider the petition of F. Drew to be restored to the privileges of fellowship reported favorably. Committees were appointed to consider similar petitions from E. M. Harding, M. C. von Groll, W. T. Bailey, G. E. Allen and A. J. Collins. Each committee reported favoring the restoration of each fellow, provided he paid what he owed the Society at the time he was deprived, plus the dues for the current year, within one month from May 31, 1921. The Council accepted all the reports and adopted their recommendations.

Dr. C. H. Lawrence reported for the Standing Committee of Arrangements, stating that the committee's plan for carrying on the annual meeting had been submitted in October and accepted by the Council at that time. When making the Budget in February, however, the sum asked for, $2,955, had been reduced to $500, so that it had been necessary to cancel the contracts already made and to so arrange with the Copley-Plaza that 500 dinners at $2.50 apiece were guaranteed to that hotel. He thought that the Council ought to stand by the Committee of Arrangements or express, at a suitable time in advance, what were its wishes in the matter of the annual dinner. Accommodations must be secured and all plans made long before the meeting, and he urged the Council, in future, to make up their minds what they wanted in the way of a free dinner, or one paid for by those who attend. The question was discussed by Dr. F. B. Lund, Dr. S. B. Woodward and Dr. R. H. Miller, and the Chairman. No action was taken.

Dr. S. B. Woodward presented the report of the Committee on Membership and Finance, as to membership, and it was accepted, and its recommendations adopted.

REPORT OF THE COMMITTEE ON MEMBERSHIP AND FINANCE AS TO MEMBERSHIP.

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire under the provisions of Chapter I, Section 5, of the By-Laws:

Howard Mendenhall Buck, of 857 Beacon Street, Boston.
James Robert Fuller, of Andover.
Justin Gideon Hayes, of Williamsburg.
Patrick Henry Keefe, of Providence, with remission of dues for 1921.
Edwin Porter Linfield, of Montello.
Joseph Smith Lockhart, of Cambridge, with remission of dues for 1921.
Arthur Morey Round, of Norton, with remission of dues for 1921.

2. That the following named Fellows be allowed to resign under the provisions of Chapter I, Section 7, of the By-Laws:

Jennie McIntosh Arey, with remission of dues for 1921.
Carl Hermann Bucholz, of Halle, Germany, with remission of dues for 1921.
Heber Howe Cleveland, of Portland, Maine, with remission of dues for 1921.
Henry Levi Davis of Battle Mountain, Nevada, with remission of dues for 1921.
Frank Collins Dunbar, of 38 Bromfield Street, Boston, with remission of dues for 1921.
Clarence Henry Hyman, of Cleveland, Ohio, with remission of dues for 1921.
Julia Grice Kennelly of 1 Kennedy Road, Cambridge, with remission of dues for 1921.

Marion Edwena Kenworthy, of New York, with remission of dues for 1921.
Cosa Dell Haskel Lindberg, of Lincoln, Nebraska, with remission of dues for 1921.
David Oscar Nathaniel Lindberg, of Denver, Colorado, with remission of dues for 1921.
John Foley Martin, of Trenton, New Jersey, with remission of dues for 1921.
Frank Adelbert Morse, of 11 Lincoln Street, Lynn, with remission of dues for 1921.
Dr. Albie Warren Sylvester, of Pittsfield, with remission of dues for 1920 and 1921.
Edward Bancroft Towne, of San Francisco, California, with remission of dues for 1920 and 1921.

3. That the following named Fellows be allowed to change their membership from one district society to another without change of legal residence, under the provisions of Chapter III, Section 3, of the By-Laws:
Benjamin Frank Murray, of Jamaica Plain, from Norfolk to Suffolk.
Nathaniel Wales Faxon, of Stoughton, from Plymouth to Suffolk.
Samuel Breck, of Middleboro, from Bristol North to Norfolk.
Alfred Peter Chronquest, of Hathorne or West Roxbury from Essex South to Suffolk.
Francis Minot Rackeman, of 263 Beacon Street, Boston, from Norfolk to Suffolk.
George David Cutler, of 311 Beacon Street, Boston, from Norfolk to Suffolk.

4. That the following named Fellows be granted remission of dues under the provisions of Chapter I, Section 6, of the By-Laws:
Albert Alphonso Wood Ghoreyeb, of Jaffa, Palestine, for 1920 and 1921.
Charles Petit De Langle, of Yountville, California, for 1921.

For the Committee on Membership and Finance,
SAMUEL B. WOODWARD, *Chairman.*

He read the following report on finance, which was accepted and the suggestion that the assessment for resident Fellows for 1922 be $10, and for non-resident Fellows $6, was adopted by vote.

REPORT OF COMMITTEE ON MEMBERSHIP AND FINANCE AS TO FINANCE.

It is desirable to retain in the society as many as possible of our members who have established themselves outside of the state and, as such persons are unprotected by our malpractice act unless the trial takes place before a court of this Commonwealth and as they secure no benefit from dividends returned to the district societies, it seems to the Committee on Membership and Finance that, in establishing the assessment rate for the ensuing year, a distinction should be made between residents and non-residents, and they suggest to the Council that the assessment for the ensuing year be $10 for residents and $6 for non-residents. For your information it may be said that the number of persons affected by such non-resident membership is about 180.

Respectfully submitted,
S. B. WOODWARD, *Chairman.*

Dr. Channing Frothingham read the report of the Committee on Medical Education and Medical Diplomas, also his report as delegate to the Annual Congress on Medical Education, Licensure, Hospitals and Public Health, at Chicago, March, 1921. (See appendix, Nos. 1 and 2.).

The reports were accepted.

He presented this motion for his committee: *Moved,* That the President of the Society appoint a committee of not less than three to investigate the various medical cults, especially osteopathy and chiropraxy, with a view to ascertaining any therapeutic value there may be in these professions. This committee shall report to the Council with a view to having the Society educate the public, the medical profession and medical schools in regard to these special cults.

It was so voted.

The President appointed the following Committee: Channing Frothingham, Boston, *Chairman;* G. S. C. Badger, Boston; J. W. Sever, Cambridge.

The Secretary read Dr. J. S. Stone's report of the Committee on State and National Legislation (See appendix No. 3), and it was accepted.

Dr. Frothingham *Moved,* That a committee of not less than five be appointed by the President to investigate health problems in relation to the care of the sick in rural communities, to see if conditions can be improved and to report their results, with any recommendations, to the Council. The motion was seconded and so voted.

The President appointed as this committee:

Homer Gage, Worcester, *Chairman.*
H. M. Field, Norwood.
P. W. Goldsbury, Deerfield.
E. H. Place, Boston.
E. P. Richardson, Boston.

Dr. E. H. Bigelow read the report of the Committee on Public Health. (See appendix, No. 4.) Voted, to accept this report.

Dr. F. G. Curtis said that the Schick test had been used, voluntarily, in the city of Newton, 430 times since May 1, 1921.

Dr. A. K. Stone presented a report as Treasurer, and it was accepted. (See appendix, No. 5.)

Dr. E. H. Brigham presented a report as Librarian, and it was accepted. (See appendix, No. 6.)

In the absence of the Chairman, Dr. Frothingham read the report of the Committee of Nine. (See appendix, No. 7.)

The report was accepted and the President stated that he had in his possession a receipt

for the dollar which had been paid for the purchase of the JOURNAL and also the transfer papers. He asked the Treasurer to take charge of them for safe keeping.

Dr. W. P. Bowers, Chairman, read the report of the Committee of Seven to Study Measures for Maternity and Infant Welfare. (See appendix No. 8).

Dr. Bowers explained that an appropriation of $500 was asked for in order that the reports presented at the State House might be followed up and that his Committee might have clerical assistance. The Chair stated that this request must be referred to the Committee on Membership and Finance under the terms of Chapter IV, Section 8, of the By-Laws.

Voted, To accept the report and to continue the Committee, referring the request for an appropriation to the Committee on Membership and Finance.

Dr. E. F. Cody moved and it was *Voted,* That the Committee on Maternity and Infant Welfare be authorized to confer with the Committee appointed by the Clinical Congress of the American College of Surgeons, and with any committee of any organized medical society, or of this Council, for the purpose of securing information and coöperation whenever it is deemed advisable.

The report of the Committee on Cancer was read and accepted. (See appendix, No. 9.)

On proceeding to ballot for officers and orator for the year 1921-1922 it appeared that 89 ballots were cast, 85 for the ticket presented by the Nominating Committee and four blanks. The Chair announced the following elected:

President: John W. Bartol, Boston.
Vice-President: Brace W. Paddock, Pittsfield.
Secretary: Walter L. Burrage, Boston.
Treasurer: Arthur K. Stone, Framingham Center.
Librarian: Edwin H. Brigham, Brookline.
Orator: Henry Colt, Pittsfield.

The President nominated and the Council elected these committees for the year 1921-22:

STANDING COMMITTEES FOR 1921-1922.

ON ARRANGEMENTS.
Donald Macomber, A. W. Reggio, J. B. Swift, K. G. Percy, F. J. Callanan, Dwight O'Hara.

ON PUBLICATIONS AND SCIENTIFIC PAPERS.
E. W. Taylor, R. B. Osgood, F. T. Lord, R. M. Green, A. C. Getchell.

ON MEMBERSHIP AND FINANCE.
S. B. Woodward, A. Coolidge, Jr., Samuel Crowell, Gilman Osgood, Homer Gage.

ON ETHICS AND DISCIPLINE.
Henry Jackson, T. J. Robinson, David Cheever, F. W. Anthony, R. H. Seelye.

ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.
C. F. Painter, J. F. Burnham, A. G. Howard, R. L. De Normandie, H. P. Stevens.

ON STATE AND NATIONAL LEGISLATION.
J. W. Bartol, F. G. Wheatley, E. H. Stevens, F. E. Jones, J. S. Stone.

ON PUBLIC HEALTH.
E. H. Bigelow, Annie L. Hamilton, E. F. Cody, Victor Safford, R. I. Lee.

COMMITTEE TO WORK WITH THE MASSACHUSETTS HEALTH COUNCIL.
Victor Safford, Boston; E. H. Bigelow, Framingham Center.

COMMITTEE TO CONFER WITH THE MASSACHUSETTS FEDERATION OF TEACHERS.
C. B. Fuller, Waltham; M. B. Hodskins, Palmer; Augusta G. Williams, Brookline.

COMMITTEE ON CANCER.
Edward Reynolds, Boston, *Chairman;* R. B. Greenough, Boston; J. Collins Warren, Boston; J. T. Bottomley, Boston; E. P. Richardson, Boston, *Secretary.*

COMMITTEE OF NINE. (FOR THREE YEARS.)
Channing Frothingham, H. D. Arnold, J. S. Stone.

Dr. Bowers bespoke uniformity in regard to paying the travelling expenses of members of the committees of the Society; he moved and it was *Voted,* That the Committee on Membership and Finance consider the question of paying mileage to members of committees of the Society and make a recommendation to the Council with a view to establishing a custom to be followed in the future.

On motion by Dr. W. G. Phippen, Dr. Charles Howard Bangs, of Swampscott, was voted the privilege of the floor to sketch the life of Dr. Samuel Fuller of Plymouth, passenger on the Mayflower, the first physician of New England, and to urge that the Massachusetts Medical Society take steps in this tercentenary year to make a suitable memorial to that eminent pioneer physician. The subject was discussed by Dr. Myles Standish of Boston, and on motion by Dr. Phippen it was *Voted,* That a Committee of Five be appointed by the President to consider some suitable memorial to Dr. Samuel Fuller. In accordance with this vote the President appointed as the Committee:

R. M. Green, Boston, *Chairman.*
C. H. Bangs, Swampscott.
G. O. Ward, Worcester.
Myles Standish, Boston.
E. D. Hill, Plymouth.

Voted, That the President appoint a delegate to the Second International Congress of Eugenics, to be held in New York City, September 22-28, 1921.

On motion by Dr. G. W. Gay, it was *Voted*, That the delegates of the Massachusetts Medical Society to the House of Delegates of the American Medical Association be instructed to oppose any modification of the resolution on the use of alcohol as a beverage and as a therapeutic agent passed by the House of Delegates at their meeting in New York, June 7, 1917. The vote was 52 in favor, 24 against.

Dr. W. D. Ruston offered the following preambles and resolution:

WHEREAS, the New England Telephone and Telegraph Company is seeking to increase its tariff from the physician's use of the telephone, and,

WHEREAS, the Public Utilities Commission of Massachusetts has granted a hearing to the "Somerville Medical Society," and others, in protest thereof, and,

WHEREAS, the aforesaid commission has the matter now under advisement, therefore be it

RESOLVED, that the Massachusetts Medical Society, through its council, petition the Public Utilities Commission, in protest against any increase in rates or change in the classification of physicians.

These were discussed by G. O. Ward, Philip Kilroy, A. H. Quessy, J. A. Mehan and A. H. Broughton, and being put to a vote were passed.

Dr. L. F. Sise introduced this motion, and it was seconded and passed: *Moved*, That the Massachusetts Medical Society favors the formation of a Section on Anesthesia by the American Medical Association, and that the delegates from this Society to the House of Delegates of the American Medical Association be instructed to that effect.

Dr. Bowers pointed out that a more thorough organization of the medical profession of the State is advisable in order that it may have more influence on medical legislation; impressed with this view, President Worcester had communicated with the presidents of the district medical societies with the object of gathering the eighteen districts into six groups; fourteen of the presidents were in favor of the scheme, one was opposed, and three had not answered. The tentative plan for the joint meetings of the district societies was as follows:

GROUP I.
Berkshire,
Hampden,
Hampshire,
Franklin.

GROUP II.
Worcester,
Worcester North.

GROUP III.
Middlesex South,
Norfolk,
Norfolk South.

GROUP IV.
Middlesex North,
Middlesex East,
Essex North,
Essex South.

GROUP V.
Suffolk.

GROUP VI.
Plymouth,
Barnstable,
Bristol South,
Bristol North.

He presented this motion:

In order that the interests of the Massachusetts Medical Society, especially as concerns impending legislation, may be brought more effectively to the attention of all the Fellows, and, furthermore, in order that the officers of the parent society may have better opportunity to learn the views of its members, it is

MOVED: That the District Societies be urged to combine in groups for their Fall meetings; and that the Secretary of the Society be asked to arrange with the officers of the District Societies for these Joint Meetings on different dates.

In reply to a question from Dr. Woodward, Dr. Bowers explained that the object was to hold a meeting of each group in the fall and thus concentrate the district societies into a smaller number and get the benefit of free discussion on legislative matters at which the President might attend.

The motion was seconded and so voted.

Dr. A. H. Quessy moved that the Massachusetts Medical Society, through its Council, hereby expresses its disapproval of the Sheppard-Towner Maternity Aid bill (Senate 1039) now before the United States Senate. The bill does not entrust the proposed aid for mothers and infants to the medical profession, but to the Children's Bureau of the Department of Labor which does not possess the scientific knowledge and qualifications necessary to protect mothers and infants; he thought the bill an entering wedge for so-called "state medicine." Motion seconded. Dr. Woodward said he hoped the Council would not pass the motion. On being put to a vote, the motion was passed, the Secretary to notify the Senators from Massachusetts of the action of the Council.

Adjourned at 7.40 P.M.

WALTER C. HOWE,
Secretary pro tempore.

APPENDIX TO THE PROCEEDINGS OF THE SOCIETY.

APPENDIX 1.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

Your Committee on Medical Education and Medical Diplomas during the past year has been asked to pass upon the application of fourteen physicians for admission to the examination before the censors. These physicians have graduated from schools which, at the time of their graduation, were not recognized as medical schools by the Society. Of the fourteen cases considered, in twelve, the physicians were admitted to the examination and in two, the applicants were refused admission to the examination.

Your Committee considered the problems of medical education and licensure in the commonwealth with especial regard to the fitness of the various medical schools to teach medicine, and the success of the existing machinery for protecting the public from improperly trained physicians. Your Committee feels

that conditions in the commonwealth in regard to these points at the present time are not satisfactory. For, at present, there are in existence in this commonwealth two medical schools which are considered, according to the classification of the American Medical Association, to be in need of a thorough reorganization before they can properly teach medicine. Also, despite the activities of the State Board of Registration in Medicine, improperly trained physicians succeed in securing a license to practice. Your Committee felt that these existing evils might be corrected by appropriate legislation and, therefore, prepared three bills for this purpose, which were presented to the 1921 Legislature.

One bill, known as House Bill No. 469, called for premedical educational requirement for admission to the examination before the State Board of Registration in Medicine. It was felt that if prospective medical students fulfilled this requirement they would then be in a position to enter schools properly qualified to teach medicine and in this way, the improperly qualified schools would either have to improve their standards to attract pupils or else go out of business. That such a bill would accomplish this purpose seems quite likely, in view of the intense opposition created in the schools which do not come up to the desired standards.

In order that the public might be protected from improperly trained physicians, two bills were introduced, House Bills Nos. 637 and 638, one requiring a year's service as an interne in a suitable hospital before admission to the examination before the State Board of Registration in Medicine, thus increasing the experience of all the doctors, and another allowing the State Board of Registration in Medicine to employ assistants in conducting their examinations, so that the tests for fitness might be more thoroughly carried out. It was felt that the first bill, No. 469, mentioned above, would help in protecting the public from poorly trained physicians in that it would cut down on the number of improperly trained applicants presenting themselves for examination before the State Board of Registration in Medicine.

These three bills had the support of the State Board of Registration in Medicine, the three medical schools standardized as Class A medical schools by the American Medical Association in this commonwealth, and the Massachusetts Homeopathic Medical Society. Of these three bills, the only one to pass the Legislature was the one allowing the State Board of Registration in Medicine to employ assistants. This bill also called for an appropriation of one thousand dollars to pay these assistants. This was stricken from the bill, but the State Board of Registration has secured it as a special grant, and it is hoped that in its appropriation in subsequent years the Board will be able to obtain sufficient appropriation in order to employ the assistants which it desires.

In the study of the situation in order to present facts for the support of these bills, it was brought out that students who enter these unrecognized medical schools find themselves in an unfortunate predicament at the end of their course, because in the large majority of states of the union it is impossible for these graduates to be admitted to the examinations of the Board of Registration in Medicine of that state. Your Committee also learned that graduates from these schools have had serious difficulty in passing the examinations of the Massachusetts State Board of Registration in Medicine, apparently because these schools are unable to give the students a proper course in medicine. The discovery of these serious obstacles for the unfortunate students trying to secure a medical education in these schools, gave an added stimulus to your Committee to attempt to secure the passage of this legislation. Your Committee feels that, although two of the bills were not passed, this year, a considerable sentiment in favor of them was created among the more intelligent legislators and that considerable information in regard to the existing conditions in this commonwealth was disseminated among the legislators and the public. It is hoped that activity will continue along these lines until the desired improvements are accomplished.

Your Committee also found that, according to the existing law, not more than three members from any state society may be on the Board of Registration in Medicine. This board is composed of seven members. Of course, it is desirable for this Board to be composed of the best physicians and naturally, the best physicians wish to join these state societies. At present, with the Massachusetts Homeopathic Society and the Eclectic Society existing in this state, it is possible to secure physicians for the State Board of Registration, but if the Eclectic Society should go out of existence, and if the Homeopathic Society should combine with the Massachusetts Medical Society, as is not at all unlikely at some future date, it might be difficult to secure a proper number of excellent men to serve on the State Board of Registration, or else it would cause a hardship to the individual by forcing him to resign from the state society. Therefore, your Committee suported a bill to change this feature of the law so that the number of members of the Board belonging to one state society was not limited. This bill, No. 465, was also defeated.

The Chairman of your Committee went as a representative of the Society to the meetings held under the auspices of the Council on Medical Education of the American Medical Association and other organizations in Chicago, in March, 1921. A separate report on the meetings will be turned in to the Council. In this report, the importance was emphasized of a proper investigation of the various medical cults and education of the physicians and public, in regard to them, so that the profession will not be criticized for being so intolerant of these cults that the public thinks the profession unjust to them. Your Committee feels that such investigations and reports would be of great value to the public and the profession and, therefore, recommends that the president appoint a committee to investigate and report to the Council on what, if any, therapeutic value there is in the various medical cults, with a view to urging the adoption of such therapeutic agents in medical practice and the education of the public in regard to them.

CHANNING FROTHINGHAM, *Chairman.*

APPENDIX 2.

REPORT OF THE DELEGATE OF THE MASSACHUSETTS MEDICAL SOCIETY TO THE ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE, HOSPITALS AND PUBLIC HEALTH, CHICAGO, MARCH 7 TO 10, 1921.

The undersigned went as your representative to the Annual Congress on Medical Education, Licensure, Hospitals, and Public Health which was held in Chicago, on March 7 to 10, inclusive, of this year, 1921. The various organizations represented were, the Council on Medical Education and Hospitals and the Council on Health and Public Instruction of the American Medical Association, the Association of American Medical Colleges, the Federation of State Medical Boards of the United States and the American Conference on Hospital Service. The Council on Medical Education and Hospitals of the American Medical Association was formerly the Council on Medical Education, but the words "and Hospitals," were added at the Annual Meeting of the Association in New Orleans in 1920. The American Conference on Hospital Service was represented at this congress, for the first time.

The introductory remarks were made by Dr. Bevan, who called attention to the need of action on the part of the medical profession for their organization so that they can provide proper medical care for the public. He considered that these questions of the

care of the public should be decided by the medical profession but felt that unless the medical profession organizes and tackles these problems the state will interfere and state medicine will be the result. He urged the medical profession to make a careful survey of the medical needs of the public in the various communities and to make plans to supply these needs. He next recommended that the medical schools in their four-year course train general practitioners, and that they should not attempt to turn out specialists in that time. He felt that the training of men in special lines should be taken up after they received their medical degree. He called attention to the fact that at the present time there was no state or other supervision over specialists, and felt that some step should be taken to make clear to the public, who really was entitled to be called a specialist in a certain field.

Dr. Leonard of Duluth, Minnesota, spoke on the practice of medicine, under the group system. He called attention to the fact that it is impossible for one man to provide the public with the various possibilities offered for the diagnosis and care of the sick. For the convenience of the patient, both in regard to time and expense, he felt that the doctors should unite in groups for diagnostic purposes. He felt that these groups need not interfere with the general practitioner nor diminish his importance, but, on the contrary, that the general practitioner should articulate with these groups as the general practitioner now does with the single specialist. By so doing, the ties between the patient and the general practitioner should be strengthened. He called attention to the importance of the members of the group not interfering with the relations between the the general practitioner and his patients.

Reports were presented by various committees representing medicine and the medical specalties, surgery and the surgical specialties, obstetrics, public health and hygiene, and preclinical subjects. These reports were prepared in order to show how much additional study should be required of a physician in order to become a specialist in the individual subject. The details of these reports will be published by the American Medical Association. In general, each committee demanded for its specialty a four-year medical course with an M.D. degree, a year, or its equivalent, in hospital service, and then a period ranging from two to three years of special study along the lines of the specialty, with due regard to the underlying fundamental sciences related to the subject. Most of the committees felt that there should be some reward for this work, such as a cerificate or a higher degree. It was emphasized that this training to become a specialist should be quite different from the existing courses offered in the various graduate schools of medcine, with the idea of giving a man an opportunity to brush up in some one subject.

In the discussion on the subject of specialists it was urged that some plan be worked out so that the public may be readily informed as to who, from his training, is entitled to be called a specialist.

President Wilbur of Leland Stanford University, called attention to the length of time necessary for a man to be prepared as a specialist and felt the time should be shortened. He claimed that two years could be readily saved in the education of American children during the grammar school period.

The second day of the conference was devoted to reports on the proper method of teaching various subjects in the medical schools. Reports were presented on the teaching of medicine and the medical specialties, surgery and the surgical specialties, and obstetrics and gynecology. These reports will be published and as they enter, with considerable detail, into the methods of teaching the various subjects, no summary will be attempted in this report.

The President of the Federation of State Medical Boards called attention to the danger to public health and medical education from the referendum in the various states. Although all votes up to the present time in regard to medical problems have been favorable, the margin has been very small in several instances. To avoid legislation hostile to the public health and medical education, he considered that an active campaign for the education of the public on public health matters should be waged by the medical profession through the schools, the press, moving pictures and magazines. A definite organization, including the laity, ought to be formed for this purpose. He pointed out that the medical profession injures its case against the special cults in medicine by condemning them without giving them a chance to be heard. This attitude towards these cults arouses sympathy among legislators, so that they give their vote on the side of the cults as they look upon them as being persecuted by the organized profession.

A summary of the report of the English and French commissions, who came to this country to study medical problems and problems of licensure, was presented. It was interesting in showing the difference in methods in these countries, but offered little in the way of suggestions toward solving our problems.

Dr. H. D. Arnold presented a report from the National Board of Medical Examiners. At the present time twenty states in the United States accept the certificate from the National Board as satisfactory for admission to practice in that state. Twelve states accept the certificate with the provision that some further examination be added, and in some of the other states the certificate is used in a certain measure. This certificate is accepted for entrance into the Army Medical Service and the Navy Medical Service and the Public Health Service. It is also accepted for admission to the examination for license to practice in England and Scotland. The report went into some detail as to the requirements for admission to examination before the National Board of Medical Examiners and the character of the examination. Only graduates of Class A medical schools will be admitted. The examination in the fundamental sciences may be taken at the end of the second year and, in additon to a general written examination at the end of four years of medical study, there will be a practical examination after the student has completed a year in the hospital. The idea is to make this examination more severe than the most thorough state board examination. In this way a certificate from the National Board of Examiners, in addition to admitting a man to practice in the various states, will stand for a certain ranking in the medical profession. In order to conduct these examinations, it is going to be necessary for the National Board of Examiners to charge a fee, which will probably be $100. In the past, the fee has only been $5, because private funds have supported the Board, but in the future this will not be the case. The success of the scheme will depend upon the number of states that will eventually accept this certificate, and upon the creation in the minds of the medical profession of a sentiment in regard to the advantage of holding such a certificate as an indication of one's medical knowledge.

Mr. Whiteside, counsel for the New York State Medical Society, read a paper upon the importance of having the public take an interest in the qualifications of the physicians whom they employ. He emphasized the fact that the medical profession should present to the public the facts upon which they are united and should not confuse the public on the subjects about which the profession, as a whole, is still undecided. He urged the profession through the lay press and other means, to take the initative in regard to public health matters and not to wait passively, until the public health is threatened by forces hostile to the medical profession be-

fore endeavoring to stir up sentiment in favor of measures necessary for the preservation of the public health.

The chiropractic problem in the United States was explained by Dr. Pinkham of the State Board of Medical Examiners of the State of California. The utter lack of proper medical training in this profession, the methods of advertising used, and the growth of the chiropractic schools were brought out. It is apparently, a problem of considerable importance, as is shown by the fact that in one of these schools alone there are 2000 pupils paying an annual tuition fee of $300 so that the school has an annual income of $600,000.

The American Conference on Hospital Service, which was started in 1919, hopes to include in its membership all organizations interested in hospital welfare, and, at the present time, includes in this membership fifteen different organizations. Dr. Smith, the Superintendent of the Johns Hopkins Hospital, presented a very comprehensive paper on the relation that the hospitals should bear toward the problems of public health, the care of the sick, the education of the public in health matters, the nursing problem, and toward medical education. He emphasized the importance of the hospital administrator and urged its more general recognition so as to attract the better medical men into this service. He took up teh problem of the training of nurses and the need for the development of practical nurses to care for the sick at a reasonable figure. He brought out the fact that there is not proper provision for the care of convalescent patients in our communities at the present time. His report consisted chiefly in calling attention to the needs, at the present time, rather than suggesting remedies in the hope that these needs would be taken up for consideration and remedies found.

Miss Graves, the Professor of Home Economics in New York State College, called attention to the importance of dietetics and the small start that was being made in fraining dietitians for posts in various hospitals. At the present time, there are very few opportunities for the proper instruction of dietitians, but the call for them in hospitals, commercial houses, etc., is becoming greater, and some provision must be made. The question comes up as to whether dietetics should be taught in medical schools or in hospitals.

The report of the Hospital Library and Service Bureau was presented. This bureau has been created in Chicago, under the auspices of the American Conference on Hospital Service, with the idea of collecting and disseminating information to any of the members of the Conference. Material is steadily being accumulated at the Bureau, which can be sent out upon request, and, if the information is not at hand, the Bureau is prepared to secure this information and send it out. The Bureau does not give opinions or advice, but simply collects information and transmits it to those desirous of it. The Hospital Conference has accepted as its standard that of the American College of Surgeons, and it is especially interested for its immediate work upon the following problems: the perfection of the follow-up system; the training of hospital executives; higher standards of community service through graduate teaching; the encouragement for demanding a hospital year as a requisite for entrance to the practice of medicine; in graduate teaching the promotion of close relation between the practitioner and the hospitals.

Dr. Vaughan, as Chairman of the Council on Health and Public Instruction, called attention to the fact that since 1900 the death rate in rural communities had not decreased and the death rate in urban communities has decreased considerably. He considers this not due so much to preventive medical measures as to the improvement in the diagnosis and treatment of sick people. He urges, therefore, that some method be taken to improve the grade of medical practice throughout the rural districts. He warned that unless this is done by the medical profession the state will take it up. This he considered undesirable. He thought that the best way to improve medical practice in the rural districts is to create county hospitals and medical centers for the use of the physicians of that neighborhood, so that they may have for their patients' benefit proper diagnostic and therapeutic aids. He urged the organization of libraries in these hospitals, for the benefit of the practitioners.

Dr. Sampson, of Iowa, demonstrated the method of county organization and county hospitals in the state of Iowa, and emphasized the fact that the greatest opposition to the development of these local health centers came from the medical profession, usually due to local jealousies. He claimed that as soon as the medical profession became united in a district and demanded proper facilities for the care of the sick in that district, it was a simple matter to persuade the public to raise money for the necessary expenses. There were several papers outlining the various methods which should be employed by the different interested elements in the community for health work. The general trend among the speakers at this congress was in favor of placing the health problems of each community in the hands of the local medical profession and opposed to having these problems settled by legislative action and state control.

It seems to your delegate that this Society should appoint a committee to study the health problems in Massachusetts, and, further, that the Society should decide whether it wants the problems settled by the activity of the medical profession or by state control. If the Society desires the former, it should take active measures to solve the problems so that the Legislature and general public will not feel called upon to do so.

CHANNING FROTHINGHAM.

APPENDIX 3.

REPORT OF THE COMMITTEE ON STATE AND NATIONAL LEGISLATION.

Your Committee in presenting their report calls attention to a condition which has never existed heretofore. The Legislature which meets next January is already chosen, and has already had one year's experience. It is a matter of record how individual members have voted on important questions. There are seven months during which the Medical Profession may lay before the members of the Legislature the causes for which we stand. If these causes could be presented with a tenth part of the zeal with which the opponents of vaccination, for example, plead for the repeal of our present inadequate laws, there is no question of our success in getting most of what we seek. It is fair to ask if any in this room without the special knowledge which we have as physicians, would do far differently from what the average member of the Legislature does. If any results are to be accomplished better than the poor results attained heretofore, it must be through the fair and reasonable presentation to the members of the Legislature, and to the public, of the causes which we believe to be right and for the general good. The opportunity to do this exists today as it has never existed before, but seven months is too short a time to allow any to be wasted.

Our successors, as members of the Joint Committee, must take the initiative and leadership, and must do the work required at hearings, but the really effective work must be done by each physician in the State, and more especially by those selected to be members of the Auxiliary Committee.

The suggestion is made that while special committees, such as that appointed to consider Maternity

and Infant Welfare are not intended to deal primarily with legislation matters, the Joint Committee on Legislation will welcome any suggestions they may make, or conferences they may ask.

Malpractice Suits.

The bill introduced by Dr. Charles E. Abbott of Andover, limiting to two years the time within which actions for malpractice may be initiated, has been enacted to take effect January 1st, 1922. It reads as follows:

"Actions of contract or tort for malpractice, error or mistake, against physicians, surgeons, dentists, hospitals and sanitaria, shall be commenced only within two years next after the cause of action occurrs."

The fairness of this provision is obvious. The witnesses for the plaintiff are always available; those for the defendant scatter far and wide.

The Publication of A Journal by The Society.

The Committee of Nine controlling the Boston Medical and Surgical Journal, under advice of counsel, sought specific authority for the Society to undertake this. The bill which has been printed in the Proceedings of the Council for February 2, 1921, was passed by the Legislature and approved by the Governor.

Vivisection.

The anti-vivisectionists this year again became active by introducing a bill to prohibit experiments on dogs. Leave to withdraw was granted. This bill was identical in purpose with that defeated a year ago in Congress which would have prohibited experiments on dogs in the District of Columbia. The action in this State is part of a campaign which is intended to be nation-wide.

Vaccination.

The Medical Liberty League introduced a bill to abolish compulsory vaccination of children in the public schools by permitting any parent or guardian to prevent vaccination. This bill was passed by the Senate but was overwhelmingly defeated in the House.

A bill introduced by the presidents of the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society to extend the requirement of vaccination to private schools and to make a physician's certificate of unfitness for vaccination good for only one year was given leave to withdraw.

Since this action, the Full Bench of the Supreme Court has handed down a decision on May 28th, 1921, sustaining the Haverhill School Board in their ruling that such a certificate of unfitness for vaccination must be renewed once in two months. The Court decides that it is clearly the intention of the Legislature that the exemption shall be limited to the period when the pupil's physical condition is such that, in the opinion of the certifying physician, he is an unfit subject for vaccination. The Court further says that the Commonwealth requires general vaccination as a preventative measure against one of the most dangerous and highly contagious diseases with which mankind is afflicted.

There is every reason to believe that this most salutary decision will lead the Medical Liberty League to concentrate their energies for a repeal of the law. The issue now is more clear cut than ever. The Medical Profession must educate the Legislature to the dangers involved in allowing any class or group to grow up to become a constant menace to the public health.

Maternity Benefits.

Senate No. 162, the Spencer bill, and House No. 1835 of 1920, the Report and bill of the Special Commission, were heard before the Committees on Public Health and Social Welfare sitting jointly. As is well known, the first of these bills is essentially a poor relief measure, while the second is proposed prenatal and postnatal nursing and in case of need, obstetric nursing.

Both bills have been referred to the next annual session. Thus the whole question is left open for continued discussion. The reference to the next session does not preclude any attempt to bring about legislation through the initiative and referendum.

Meantime the Sheppard-Towner bill is before Congress, and is endorsed by the President and by the Governors of many States.

It is earnestly hoped that this Society will take a wide and active interest in this subject, not only through the Council and through the Special Committee appointed in February, but through the various districts.

If the published mortality statistics of the State are to be credited, if the unanimous report of the special commission appointed by the Governor a year ago which includes in its membership the President of our Society and the Commissioner of Health of the State, is not wholly mistaken, the medical profession is faced with an unduly high, and in great part preventable death rate from puerperal septicaemia and eclampsia. Our State does not show as bad figures as do other States. Your Committee believes the Medical Profession should and will take the leadership in making conditions better. But we must act and act promptly and constructively to meet the conditions which confront us.

Licensing of Hospitals.

Senate No. 250, relative to the Licensing and Establishing of Hospitals, gave the department of public welfare the right to license all hospitals, if the local board of health first certified to suitability, after holding properly advertised public hearings. The last clause of the bill reads thus:

"If, before the expiration of ten days following the last publication of the notice as required in the preceding section, the owner of any real estate within one hundred feet of the premises to be so used as a hospital notifies said department in writing that he objects to the granting of the license, no license to establish or keep said hospital shall be issued."

The wide door to blackmail under such a law is plain. So much agitation and discussion was aroused by this bill that the measure advocated by the Maternity Commission and concurred in by the Commissioners of Public Health and Public Welfare that the licensing of lying-in hospitals be transferred from the Department of Public Welfare to the Department of Public Health also went down to defeat. Certainly the licensing and regulation of all hospitals is a matter of vital concern to the entire medical profession.

Physical Training and School Nurses.

These two measures so long fought for by various organizations and individuals have finally been enacted. Year by year supposed objections which were pointed out have been eliminated. The Physical training bill adds to the general laws governing the school curriculum, these seven words "Indoor and outdoor games and athletic exercises."

The School Nurse bill as finally enacted reads as follows:

"The school committee shall appoint one or more school physicians and nurses, shall assign them to the public schools within its jurisdiction, shall provide them with all proper facilities for the performance of their duties and shall assign one or more physicians to the examination of children who apply for health certificates required by section eighty-seven of chapter one hundred and forty-nine, but in cities where the medical inspection hereinafter prescribed is substantially provided by the Board of Health, said board shall appoint and assign the school physicians and nurses. The department may exempt towns having a valuation of less than one million dollars from so much of this section as relates to school nurses."

PREMEDICAL EDUCATION AND LICENSURE.

House No. 469 introduced on petition of Channing Frothingham and providing for Certain Educational Requirements of Applications for Registration in Medicine was granted leave to withdraw. It provided for graduation from a high or secondary school, and satisfactory completion of two years of college work, or the granting of a qualifying certificate by a State Board as a prerequisite to the Study of Medicine. The opposition voiced in the hearings was less this year than a year ago.

House No. 1458 introduced on petition of Dr. John J. Dowling, has been enacted. It provides that the Board of Registration in Medicine in the examination of applicants for registration as physicians and and surgeons may secure hospital and laboratory accomodations and expert assistance.

Psychiatry has been added to the list of subjects in which applicants for registration as physicians must be examined.

House No. 638 requiring a year's interneship before registration was referred to the next annual session.

Other measures intended to limit registration to citizens of the United States were defeated.

House No. 465 eliminated the clause in the law prohibiting the appointment of more than three members of any medical society to the Board of Registration in Medicine, was referred to the next annual session. With the Eclectic Medical Society practically extinct, the problem is becoming pressing. It would become still more pressing if a bill referred to the next annual session limiting the term of members should be favored.

Senate 369, as amended by Senate 405, relating to an investigation of the Board of Registration and other licensing boards was defeated.

House No. 467 to regulate the practice of midwifery became the basis of Senate 398. This bill was rejected in the Senate.

MENTAL EXAMINATION OF INDICTED PERSONS.

A measure of importance which has been passed provides for the examination by the Department of Mental Diseases, of the mental condition of any person indicted for a capital offense or indicted more than once for the same offense. The report presented is to be evidence before the Court. This should simplify and hasten the administration of justice.

The nursing question which, a year ago, came before the Legislature in the form of a bill to license attendants has not been brought up again this year. The problem remains, however, and may next year be brought up for legislative consideration. Many organizations are considering the different phases of the matter. Individual physicians are taking an interest, but officially the Massachusetts Medical Society has done nothing in response to the action of the New England Surgical Society, taken in Providence last October. Reduced to its simplest terms, the question is, how the family of moderate means can be supplied with adequate nursing care when the need comes.

The Committee again asks for the aid, advice, and support of the whole Society.

JAMES S. STONE, *Secretary.*

APPENDIX 4.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE YEAR ENDING MAY 31, 1921.

The Public Health Committee, during the past year, has arranged, as usual, to supply on request, speakers for meetings of the District Societies. The Committee and the Society are indebted to the following named gentlemen, who placed themselves at our disposal for this purpose: Doctors Edwin H. Place, George H. Wright, William T. Sedgwick, C. Morton Smith, George Gilbert Smith, William C. Woodward, Walter E. Fernald, Frank Dunbar, Timothy Leary, Howard A. Streeter, José Penteado Bill, Lesley H. Spooner.

During last summer and autumn, the members of the Public Health Committee spent considerable time and effort in an endeavor to find something which the Committee might do in the northwestern part of the State of practical value in the promotion of public health, and which would, at the same time, reflect credit on the Massachusetts Medical Society and bring it in closer touch with people in that part of the State. A Health convocation, somewhat similar to those which have been held at Boston and Springfield, as well as various other projects, were considered.

Before the Committee could decide upon any undertaking in this part of the State, which seemed to promise pratical results commensurate with the cost, it became so late in the season that the scheme had to be abandoned for the year.

In view of the demonstrated practical value of the Schick test and the rapidly increasing demand for immunization against diphtheria, the Committee has undertaken to give physicians, in the various parts of the State, an opportunity to obtain personal instruction in making the test, in interpreting the reactions and in administering the toxin-antitoxin immunizing mixture. The Committee engaged Dr. Joseph Garland as its agent in carrying on this work. The State Department of Health has furnished the material and has otherwise coöperated with the Committee.

In the localities selected for demonstration and instruction, hospitals have, so far as possible, been used for this purpose, both on account of the convenience to local physicians and because the personnel of a hospital is likely to serve as subjects for the demonstration of the procedure.

With the resources at the disposal of the Committee, it is, of course, impossible to reach every community in the State and places where it is known that physicians are already familiar with the Schick test are being passed by. It is, as yet, too soon to appraise the results of this work, but it is apparent that the interest exhibited by physicians in the opportunity thus offered them varies greatly in different localities.

Respectfully submitted,

ENOS M. BIGELOW, *Chairman.*
ANNIE LEE HAMILTON, *Secretary.*
EDWARD F. CODY.
ROGER I. LEE.
VICTOR SAFFORD.

APPENDIX 5.

REPORT OF THE TREASURER.

	May 31, 1921.
Active Account in New England Trust Co., Jan. 1, 1921	$ 2,689.98
Received from all sources	34,973.24
	$37,663.22
Spent to date	21,158.23
Balance on hand	$16,504.99
Balance in Old Colony Trust Co.	3,525.52
	$20,030.51

ARTHUR K. STONE, *Treasurer.*

APPENDIX 6.

REPORT OF THE LIBRARIAN.

May 31, 1921.

The Librarian would report that during the past year he has performed the duties of his office as prescribed by the Society by-laws.

Respectfully submitted,

EDWIN N. BRIGHAM.

APPENDIX 7.

REPORT OF THE COMMITTEE OF NINE.

The Committee of Nine appointed by the Council at the annual meeting in June, 1920, to consider and act upon the advisability of the Massachusetts Medical Society's taking over the BOSTON MEDICAL AND SURGICAL JOURNAL as its official organ, have attended to their duty and beg leave to submit the following report:

Pursuant to the instructions of the Council, the committee held frequent meetings to consider the problem, and at one of its meetings invited the Presidents of the District Societies to confer with them. After very full and careful consideration of the question from every angle, it was the unanimous opinion of the committee that, if satisfactory arrangements could be made with the owners, the Society should assume the responsibility of editing and publishing the JOURNAL. The owners agreed to transfer the property, free from all incumbrances, on condition only that, in case the Society should wish at any time to discontinue the publication, the property should revert to them, equally free from all incumbrances.

The Committee, therefore, acting under the authority of the vote of the Council, have secured permission from the General Court for the Society to publish a medical journal, have taken over the property, the lease of the office, the contract with the publisher, and have appointed Dr. W. P. Bowers managing editor. The committee brought strong pressure to bear on Dr. Bowers to induce him to accept, because they believed him peculiarly fitted for the position and because they knew that he possessed to an unusual degree the confidence of the Society. That he was willing to accept, even at great personal sacrifice, is but a fresh illustration of his unselfish devotion to the interests of the Society and of the medical profession of Massachusetts.

Dr. Bowers assumed charge in April and, although progress is necessarily slow, many changes have already been made to meet what we believe to be the best interests of the Society, and further improvements may be confidently expected.

The success of the undertaking will depend on the degree of coöperation which it receives from the members of the Society. A very strong body of associate editors has been secured, whose names are a guaranty of the quality of the scientific articles which will appear, and a corps of reporters, representing the different districts, has been obtained through whom it is hoped that the activities of the local societies, as well as other matters of professional interest, may be promptly received and promptly published.

We bespeak your patience, your coöperation, and your support, and if these are freely given, we pledge our best efforts to provide you with a journal that shall be a credit to the Society.

For the Committee,
HOMER GAGE, *Chairman.*

May 29, 1921.

APPENDIX 8.

REPORT OF COMMITTEE ON MATERNITY AND INFANT WELFARE.

The Committee of Seven appointed on February 2, 1921, for the purpose of studying measures for maternity and infant welfare, has held eight meetings at the Boston Medical Library.

In accordance with the vote authorizing the appointment of the Committee, it has added to its members Dr. E. P. Ruggles and Dr. O. R. Chadwell to represent the Massachusetts Homeopathic Society.

Your Committee, before presenting its formal report, desires to refer to an impression that efforts have been made to discredit the work done by the physicians of Massachusetts. This committee desires to be put on record that it holds the opinion that professional work in this state may be favorably compared with that done anywhere and, furthermore, the committee believes that Massachusetts physicians will unite and lead in finding a solution of the problem involved in the care of child-bearing women and of infants.

The Committee has unanimously adopted the following report of findings and recommendations:

Findings:

1. In justice to the medical profession, it should be clearly understood that so-called maternal deaths include deaths in the puerperal state which, in the international classification, includes pregnancy, parturition, and lactation. This classification is, in certain respects, misleading.

2. So far as statistics are of value, approximately 65% of 329 deaths, occurring in Massachusetts in the first half of 1920, were reported as due to septicemia and eclampsia.

3. Whether the statement that deaths from puerperal septicemia are increasing or not is correct, this Committee has not yet been able to determine, but the matter is of such importance as to demand further study.

4. Such reports as have been studied by the Committee show that deaths from toxemia of pregnancy are decreasing wherever the patients place themselves under prompt and adequate prenatal care.

5. It appears that inadequate records relating to puerperal cases are kept in many hospitals.

6. A great variation—from 3% to 18%—in the number of Caesarean sections done in hospitals of the same general type in various communities warrants investigation.

7. The time at the disposal of the Committee has not permitted investigation into maternal morbidity and infant welfare. Both of these matters warrant a study.

Recommendations:

1. Accurate and adequate statistics of mortality in hospital and private practice cannot be attained until physicians make more explicit returns.

2. Licensing of lying-in hospitas should be carefully supervised.

3. Publication of adequate reports by all hospitals.

4. The development of separate obstetric wards, and, where practical, of separate obstetric services in hospitals.

5. The medical profession is urgently requested to educate the community as to the necessity and value of adequate prenatal care.

6. The development of prenatal clinics in connection with existing hospitals.

7. The continuance of a committee, with an appropriation by the Society of the sum of $500 for carrying on its work, and the request that the Massachusetts Homeopathic Medical Society appropriate $50 for the same purpose, to prosecute the study of matters connected with the child-bearing state and infant welfare.

8. The various district societies are urged to appoint special committees for the intensive study of these matters, and to coöperate with any committee of the state medical societies.

WALTER P. BOWERS, *Chairman.*

APPENDIX 9.

REPORT OF THE COMMITTEE ON CANCER.

Gentlemen:

Your Committee has the honor to make the following report:

Meetings of the Committee have been held, alone and in conjunction with the Massachusetts State Committee of the American Society for the Control of Cancer, upon which your Committee is individually and collectively represented. Three meetings of district societies have been arranged by the Secretary of your Committee during the past year, and speakers on cancer subjects have been provided. Other district societies have been approached with the suggestion of a cancer meeting during the year and, in many instances, this suggestion has been complied with and such meetings have been held.

There is a general disposition evident among members of the medical profession, as well as among laymen, to devote more attention to the educational aspects of the cancer problem, and it is the opinion of the Chairman of this Committee that for work among the members of the medical profession a committee of the Massachusetts Medical Society is the safest and most authoritative body available. On this account he recommends that the Committee be continued in office.

Respectfully,

EDWARD REYNOLDS, *Chairman*,
J. COLLINS WARREN,
JOHN T. BOTTOMLEY,
EDWARD P. RICHARDSON, *Secretary*,
R. B. GREENOUGH, *Vice-Chairman*.

MORE ABOUT THE ALLEGED SCARCITY OF COUNTRY PRACTITIONERS.

Mr. Editor:—

Some time ago it was stated in your columns that seventy towns in this commonwealth lacked physicians, and this deplorable state of affairs was "viewed with alarm." In order to test the truth of this statement, I wrote to one town which in its town meeting had at least discussed the matter of offering a bonus to any doctor who would settle within its limits. I asked for details as to local economic conditions and sent one letter to the town clerk and another to the proprietor of the local drug store, in both cases enclosing a stamped and addressed envelope for a reply. I have never heard from either inquiry.

Two weeks ago I inserted the following advertisement in *The Congregationalist*, which goes into nearly every town in the state big enough to support any sort of a professional man:

> Physician, A1 professional standing, educated (A.B., M.D.), Congregationalist, now city practitioner, wishes village or country practice. Protestant community, Massachusetts or Connecticut, where citizens really *want* local doctor. Good schools necessary condition, also living income from start. Strictest investigation invited. Address "Medicus," *Congregationalist*.

I really expected to possess myself thereby of a great store of information regarding the desperate medical needs of the rural districts of the state. But the fact is that up to date, two weeks after the publication of the advertisement, I have received but three replies, distributed as follows, *viz.*, one from Vermont, one from Wisconsin and one from South Dakota!

Judging from the replies received, it seems as though Horace Greeley's advice still holds good: "Young man, go west!"

MEDICUS.

June 14, 1921.

THE HENRY J. BIGELOW MEDAL.

The JOURNAL was unable to secure the address given by Dr. William J. Mayo at the time of the presentation of the Henry J. Bigelow Medal, because it had been promised to the *Journal of the American Medical Association*. It is with pleasure, however, that a reproduction of the medal is herewith presented.

OFFICERS OF THE MASSACHUSETTS MEDICAL SOCIETY ELECTED MAY 31, 1921.

President: John W. Bartol, 3 Chestnut Street, Boston.
Vice-President: Brace W. Paddock, 7 North Street, Pittsfield.
Secretary: Walter L. Burrage, 42 Eliot Street, Jamaica Plain.
Treasurer: Arthur K. Stone, Auburn Street, Framingham Center.
Librarian: Edwin H. Brigham, 8 The Fenway, Boston.